

# A Theory of Civil Conflict and Democracy in Rentier States\*

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## **Abstract**

The effects of resource rents on the political equilibrium have been studied in two main types of models. The first tradition employs models of conflict, and studies how resource rents affect the intensity and duration of civil conflict. The second tradition employs political economy models, where resource rents affect the political equilibrium because the costs and benefits of buying votes change. Although providing much insight, these traditions have little to say about when democracy emerges, and about when conflict emerges. In this paper, by integrating the earlier model traditions, we suggest the simplest possible framework we can think of to study the choice between conflict and democracy. We show how factors such as resource rents, the extent of electoral competition, and productivity affect economic and political equilibria.

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## **I. Introduction**

One of the most studied empirical questions in the conflict and democracy literature over the last decade has been the connection between resource abundance and civil conflict. According to Collier and Hoeffler (2000), “the extent of primary commodity exports is the largest single influence on the risk of conflict” (p. 26). Damania and Bulte (2003) show that resource abundant countries are on average less democratic than resource poor countries. Several empirical studies, for instance Elbadawi and Sambanis (2002) and Fearon and Laitin (2003), challenge the findings of the large literature initiated by Collier and Hoeffler, and conclude that a broad resource measure that includes all primary commodities does not have a robust association with civil conflict. Many studies have, therefore, investigated which particular natural resources may contribute to conflict, and which do not.

For example, Ross (2001) finds that, after controlling for other factors, countries rich in oil have a higher probability of being a dictatorship than other countries. Auty and Gelb (2001) likewise concludes that ‘point resources’ such as minerals, have a particularly strong association with destabilizing social tension, while Murshed (2004) suggests that ‘point resources’ retard democratic and institutional development. Similarly, de Soysa (2002) and Fearon and Laitin (2003) find that a dummy variable for oil exporters makes civil conflict more likely. Lujala (2005) concludes that onshore oil production increases the probability of civil conflict, but that offshore production does not, and Lujala, Gleditsch and Gilmore (2005) suggest that secondary diamonds increase the likelihood of conflict. In general, it seems fair to say that the results from the abundant empirical literature indicate that oil, gemstones, minerals and other ‘lootable’ resources are connected with civil conflict, but that there appears to be no similar effect of less lootable (and less valuable) resources such as agricultural land. An overview of this empirical literature is provided by Ross (2004).

Theoretical studies of the effects of resource abundance on the political equilibrium can be divided into two main groups. The first group consists of conflict models where resource rents affect the intensity and duration of civil conflict. Collier and Hoeffler (2000) explain their empirical findings of resource abundance causing conflict in a model assuming that more resource rents make fighting more possible due to available financing, as well as more profitable since the prize for the ‘winner’ is larger. Skaperdas (2002) and Mehlum and Moene (2002) show how the fighting efforts and the social waste of fighting increases with the size of natural resource rents. Torvik (2002) studies a rent seeking game where more natural resources makes rent seeking relatively more attractive when compared with production, and shows that as a consequence more natural resources in such a setting decreases overall welfare. Olsson (2006) sets up a predator-prey model where rebels choose between peaceful production and predation on natural resources. More natural resources may then depress public investment in favor of military spending used to fight off rebels.

The second group of models where resource abundance affects the political equilibrium consists of models where voters are explicitly modeled. Tornell and Lane (1999) show how resource rents may yield a political equilibrium whereby each group attempts to acquire a greater share of production by demanding more transfers. In turn, more transfers increase the tax rate and reduce the net return on capital. This redistributive effect may then outweigh the direct effect of increased productivity. Alternatively, Robinson, Torvik and Verdier (2006) explicitly model politicians, and show how the costs and benefits of buying votes through inefficient redistribution, for instance by bribing voters with well-paid but unproductive public sector jobs, increases with public sector resource income. Acemoglu and Robinson (2006a) model underdevelopment as the result of political elites blocking technological and

institutional development because such development may erode the elites' incumbency advantage. Such blocking is more likely to arise when the rents from maintaining power is high, such as where public income is derived from natural resources. In addition, and as discussed in Acemoglu, Robinson and Verdier's (2004) personal rule model, greater resource rents make it easier for dictators to buy off political challengers. Damania and Bulte (2003) show that when politicians maximize the surplus from a lobbying game, resource abundance may increase the income from lobbying, but divert the economy from its optimal path. Ades and Di Tella (1999) discuss how natural resource rents may stimulate corruption, and Robinson and Torvik (2005) show how increased resource rents may make it politically efficient to win votes by building 'white elephants', rather than efficient investment projects, even when voters are fully rational.

Surprisingly, however, while there are many well-articulated models of conflict and resource rents on one hand, and models of politics and resource rents on the other, even a basic theory of how the choice between democracy and conflict endogenously depends on resource rents has not been developed. This paper attempts to address this theoretical deficiency by suggesting a simple framework that integrates these established model traditions, and allows politicians to choose endogenously the type of regime that is in their own interest.

A crucial real world motivation of our model is that the actors that may run in an election are those that may alternatively engage in civil conflict. Examples include UNITA and MPLA in Angola, FRELIMO and RENAMO in Mozambique, and ZANU and ZAPU after the 1980 independence in Zimbabwe, *La Violencia* between the Liberal and Conservative parties in Colombia 1946-1963, and many more. Even ETA in Spain and IRA in Ireland have been closely connected to (or part of) political parties.

It may be the case that the attractiveness of fighting increases with resource rents. But from this, one can not conclude that resource rents make conflict more likely. A sizeable literature points to the fact that resource rents also make the expected payoff from electoral competition higher, as resources to a large degree are publicly owned or taxable. The question is not whether resource rents make the absolute payoff from conflict higher, but rather whether resource rents make the payoff from conflict *relative* to democracy higher. To study this, one needs to integrate the conflict models and political economy models.<sup>1</sup> Thus, we concur with Ross (2004), who discusses the mechanisms pointed out in the previous literature and argues that (p. 344) “Many of these arguments are, at a minimum, underspecified.”

Violent competition is costly. An army must be set up, soldiers need to be paid, and property may be destroyed. However, competing through conflict also provides politicians with autonomy in case they win: that is, they are not accountable to voters. Competing in a democracy, on the other hand, is arguably less costly than competition through conflict. (In our case we assume that the direct cost of running in an election is zero). However, politicians are accountable to voters, and for opportunistic politicians this is a cost: they get away with less rents than if they were not constrained by voters. A priori, thus, it is not clear that politicians would always prefer one regime to the other. In our model, the politicians’ optimal regime choice will be seen to depend on political and economic characteristics of the economy at hand.

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<sup>1</sup> Of course, if the groups that engage in civil conflict are not the same as those who may alternatively run in an election, a standard conflict model might suffice to study the question. In that case conflict simply is initiated if the expected payoff is positive, see footnote 3 below.

Although a main focus of our model is the study of the economic causes of the choice between conflict and democracy, the model may also shed some light on the economic consequences. With conflict, income for the ‘electorate’ is lower than with democracy. As politicians are opportunistic in our setting, there are no income transfers under conflict – politicians simply try to retain power by paying soldiers for their fighting services. With democracy, on the other hand, the ‘fight’ for power is different – policy platforms are designed to attract voters. In such a regime political rents are, in part, transferred to voters, meaning that their income is higher with democracy than conflict. Furthermore, aggregate income with conflict is lower than with democracy. Fighting is unproductive (or destructive) from the point of view of society. When resources used for fighting have an alternative use with positive productivity, conflict reduces aggregate income even if destruction does not take place.

Other than the literature discussed, our model is inspired by and most closely related to the pioneering works of Acemoglu and Robinson (2000, 2001, 2006b). As in their models the key mechanisms result from politicians choosing the political system which is in their own interest. One primary difference is that in the Acemoglu-Robinson tradition the game occurs between a political elite and the majority of the population. In our model, the game takes place between politicians (who in turn take into account the behavior of voters).

In Section 2 we formulate the model, discuss how payoffs under democracy and conflict are determined, and derive the conditions for the different political outcomes. Section 3 provides some concluding remarks.

## II. The model

Assume there are two politicians or political groups that compete for political power within society. The politician who secures power gets access to the resource rents of society and has the right to decide policy. The form of political competition – electoral competition or conflict – is endogenous. Politicians are assumed to choose the form of political competition that is in their own interest.

There are infinitely many periods  $t = 0, \dots, \infty$ . In each period the timing of events in the game is as follows.

1. Groups announce political platforms and/or initiate conflict.
2. If (at least) one group initiates conflict, conflict becomes the institutional equilibrium in that period. Conflict takes place and the winner get access to the rents of power which he consumes before the period ends. If no group initiates conflict, an election is held.
3. If an election is held, the losing party decides whether to accept the electoral result, or to initiate conflict. If conflict is initiated the winner get access to the rents of power which he consumes before the period ends.
4. If conflict is not initiated, the announced political platform is implemented and the winning party consumes the remaining rent.
5. A new period starts.

We focus on the conditions under which democracy is a possible self-enforcing equilibrium (a subgame perfect equilibrium). Obviously, in order for democracy to be a (self-enforcing) equilibrium of this game, the loser of an election must be willing to accept an electoral loss.

We will focus on a triggerstrategy equilibrium where in each period each group don't initiate conflict, but runs for election and try to maximize their expected rent. We will look at the best symmetric triggerstrategy equilibrium and ask under which conditions democracy is viable and what distributional consequences this may have.

As is well known from the theory of repeated games, even better equilibriums may be achieved if very hard punishments are inflicted. It is also well known that the viability of such hard punishments may be discussed. In line with a long literature we focus on the simple triggerstrategy equilibrium with Nash-punishments.

In the case of conflict, each group tries to maximize its expected gross revenue from the conflict. The expected gross revenue which an organized group,  $I=A, B$ , can generate per period depends on the resource rents  $R$  and the fighting efforts of the two groups  $G^I$ . The military contest success function follows Tullock's (1975) standard specification [see Skaperdas (1996) for an axiomatic derivation]. In this, the probability of winning equals the fighting effort of one's own group relative to the total fighting effort. As our agents are assumed to be risk neutral this probability function can alternatively be thought of as the share of rents from predation upon natural resources accruing to each group. Hence the gross revenue function in case of conflict,  $\Omega^I$ , is given by:

$$\Omega^I = \frac{G^I}{G^J + G^I} R, \quad I, J = A, B, \quad I \neq J. \quad (1)$$

Conflict is (more) costly to initiate (than elections) – in our setting the initiation of conflict requires the fixed cost of  $F$  soldiers. Each additional soldier produces one unit of fighting



effort. Wages are equal to the marginal productivity of labor in regular production, assumed to be constant at  $w$ . The cost of conflict for group  $I = A, B$  is then given by:

$$C^I = wF + wG^I. \quad (2)$$

Both groups choose the size of their labor force so as to maximize expected net revenue. Using equations (1)-(2) and taking the opposing groups' fighting effort as given, this results in each groups' reaction function:

$$G^I = \sqrt{\frac{G^J R}{w}} - G^J, \quad I, J = A, B, \quad I \neq J. \quad (3)$$

With conflict the allocation of fighting efforts are given by the Nash equilibrium:

$$G^I = \frac{R}{4w}. \quad (4)$$

Thus the higher the resource rents relative to labor productivity in regular production, the more intense a fight will be. The per period expected utility that each group receives from a conflict,  $U_c^I$ , is found by inserting the Nash equilibrium allocations of soldiering into the net revenue function:

$$U_c^I = \frac{R}{4} - wF. \quad (5)$$

The expected utility of a fight is higher the higher the resource rent, the lower the marginal productivity of labor, and the lower the fixed cost of initiating conflict. Moreover, with a marginal increase in resource rents, half of this increase is wasted due to more fighting, and

the other half accrues to the winner of the conflict. Thus on the margin the extent of rent dissipation in this simple set up is  $\frac{1}{2}$ .

If a conflict is not initiated, there is an election to determine who wins power. Our specification of the electoral outcome is based on a simple version of probabilistic voting. The two parties or opposing groups compete in an election with an objective of maximizing their expected rent. The expected rent consists of the probability of winning the election  $P^I$ , multiplied by the rents of power under democracy,  $X^I$ . The per period expected utility under democracy,  $U_D^I$ , is given by:

$$U_D^I = P^I X^I, \quad I = A, B. \quad (6)$$

The number of voters is normalized to unity. The public spending or transfer to each voter  $i$  from politician  $I = A, B$  is denoted  $g_I^i$ , and consists of the remaining resource rents after the incumbent politician has extracted his rent:

$$g_I^i = R - X^I, \quad I = A, B. \quad (7)$$

Voters have identical preferences over economic policy, but different preferences over ideological attributes of the political candidates. Per period income  $Y_I^i$  for voter  $i$  when politician  $I = A, B$  holds power is given by the sum of the wage income and net transfers:

$$Y_I^i = w^i + g_I^i. \quad (8)$$

The per period utility of income for voter  $i$  is:

$$W_i^i = \ln(w^i + g_i^i), \quad (9)$$

and the full preferences for individual  $i$  are given by:

$$\omega_i^i = W_i^i + (\sigma^i + \delta) D_B, \quad (10)$$

where  $\sigma^i$  is an individual specific ideology parameter,  $\delta$  is the average, relative popularity of candidate B, and  $D_B$  is a dummy variable that takes the value of unity if party B wins the election and zero otherwise. We assume that the individual specific ideology parameter,  $\sigma^i$ , is uniformly distributed on the interval  $[-1/2\phi, 1/2\phi]$  with density  $\phi > 0$ , whereas the relative popularity parameter,  $\delta$ , is uniformly distribution at the interval  $[-1/2\psi, 1/2\psi]$  with density  $\psi > 0$ . The realized value of  $\delta$  is not revealed until after the election, but the politicians are assumed to know the distribution of  $\delta$ . Voter  $i$  supports candidate A in period  $t$  if  $\sigma^i < W_A^i \div W_B^i \div \delta$ . The number of voters who vote for politician A,  $N^A$ , is then given by:

$$N^A = \int_{-\frac{1}{2\phi}}^{\ln(w+R-X^A) - \ln(w+R-X^B) - \delta} \phi di = \frac{1}{2} + \phi \left[ \ln(w+R-X^A) - \ln(w+R-X^B) - \delta \right]. \quad (11)$$

The election probability for politician A,  $P^A$ , is given by:

$$P^A = \Pr \left\{ N^A \geq \frac{1}{2} \right\} = \Pr \left\{ \delta \leq \ln(w+R-X^A) - \ln(w+R-X^B) \right\}, \quad (12)$$

which can be simplified to:

$$P^A = \int_{-\frac{1}{2\psi}}^{\ln(w+R-X^A)-\ln(w+R-X^B)} \psi di = \frac{1}{2} + \psi \left[ \ln(w+R-X^A) - \ln(w+R-X^B) \right]. \quad (13)$$

Clearly, candidate B wins with probability  $1 - P^A$ . Faced with this election probability, the candidates set policy in each period so as to maximize expected rents. The policy platform of politician A will be the solution of the following objective-function:

$$\max_{X^A} P^A X^A = \left\{ \frac{1}{2} + \psi \left[ \ln(w+R-X^A) - \ln(w+R-X^B) \right] \right\} X^A. \quad (14)$$

Similarly, politician B chooses  $X^B$  to maximize  $(1 - P^A)X^B$ . By symmetry we have full policy convergence - both candidates face the same problem and choose the same policy platform. The convergence in political platforms implies that the identity of the swing voter is given by  $\sigma^S(X^A, X^B, \delta) = -\delta$ . All voters with  $\sigma^i$  to the right of  $\sigma^S$  vote for B, whereas all voters with  $\sigma^i$  left of  $\sigma^S$  vote for A. The expected value of  $\delta$  is zero, and hence both parties expect to win the election with probability  $\frac{1}{2}$ .

From (14) and the symmetry properties we find the equilibrium rent for an incumbent under democracy as:

$$\tilde{X}^I(R, w, \psi) = \min \left( R, \frac{w+R}{(2\psi+1)} \right), \quad (15)$$

which is constrained by the fact that rents cannot exceed the per period resource rents. We note that the more voters care about the economic outcome relative to other factors, i.e. the higher is  $\psi$ , the lower are the equilibrium rents for politicians under democracy:

$$\frac{\partial \tilde{X}^I}{\partial \psi} = -\frac{2(w+R)}{(2\psi+1)^2} < 0. \quad (16)$$

The intuition for this is that when voters care much about economy, politicians loose many votes by transferring rents from voters to themselves, creating stiff electoral competition competing away much of the political rents by having power.

We also note that the higher the resource rents, and the higher the productivity in production, the more rents are left for politicians:

$$\frac{\partial \tilde{X}^I}{\partial R} = \frac{\partial \tilde{X}^I}{\partial w} = \frac{1}{2\psi+1} > 0. \quad (17)$$

The higher the resource rents, and the higher the productivity in production, the higher the rents for politicians under democracy. As the marginal utility of income decreases with income, a higher income in the first instance means that politicians find it less costly in terms of votes to take more of the resource rents themselves, and leave less for the voters. Since both candidates gain less in electoral support by promising a higher level of public transfers, the equilibrium rent is higher.

The expected utility for both candidates of running in the election becomes:

$$U_D^I = \min \left\{ \frac{1}{2}R, \frac{w+R}{2(2\psi+1)} \right\}. \quad (18)$$

If parties could commit themselves to accept the electoral result prior to the election, candidates would agree to run for election (at stage 1) if the expected utility from an electoral ‘battle’ exceeds the expected utility from a military battle. Hence in this case the following condition must be satisfied in order for an election to take place:

$$\frac{w + R}{2(2\psi + 1)} > \frac{1}{4}R - wF. \quad (19)$$

Clearly, if parties can commit to not initiating conflict should they lose an election this is attractive for both provided equation (19) is satisfied, as in this case the expected utility for both is higher with such commitment. It might thus in this case be in the parties’ own interest to design institutions that makes not respecting election results difficult.

In reality, however, a commitment to respect election results can be hard to implement, in particular in countries with a weak democratic and institutional infrastructure. Hence, without such commitment, the parameters that satisfy condition (19) are not sufficient for electoral competition to provide a viable alternative to civil conflict. For democracy to be a viable alternative to civil conflict, it must be the case that *ex post* the loser of the election is better off by accepting the electoral result, than by initiating conflict. We assume that if either party were to abort the election result by initiating conflict, then the parties would be left to settle future disputes over power by civil conflict.<sup>2</sup> Stated differently we assume that both players use a “trigger strategy”: any violation of the electoral outcome causes both to carry out a punitive action that last forever, where in this case the punitive action is conflict. Although we stick to this assumption in the remainder, note that with the exception of the role of

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<sup>2</sup> If the consequences of aborting the election result were less drastic, then the configuration of exogenous parameters under which a self-enforcing democracy would be possible is more restricted.

politicians' discount factor all our qualitative results holds also under an alternative assumption that commitment to respect an election result is possible. (This can be verified by using equation (19) as an alternative to the proofs we present). Denoting the politicians' discount factor of future income  $\beta \leq 1$  we now obtain:

**Proposition 1.** *A self-enforcing democracy is possible regardless of the natural resource endowment when  $\psi + \frac{1}{2} < \beta$ .*

*Proof:* When an election takes place, the relative popularity parameter, and thus the identity of the swing voter is revealed, and party  $I=A, B$ , either lose or win the election. The loser of the electoral contest has to decide to accept the election result, or to initiate conflict.

Consider first the case where a loser accepts the electoral outcome. In this case a loser will receive zero utility in this electoral period, but a chance to run again for election in the future.

The current value expected discounted value of this,  $V_D^I$ , is:

$$V_D^I = 0 + \sum_{t=1}^{\infty} \beta^t \left( \frac{w+R}{2(2\psi+1)} \right) = \frac{\beta}{1-\beta} \left( \frac{w+R}{2(2\psi+1)} \right). \quad (20)$$

Next, consider the case where a loser does not accept the electoral outcome and a conflict is initiated. Following the assumed punishing rule, he receives per period utility as given by equation (5). The expected discounted value of this,  $V_C^I$ , is:<sup>3</sup>

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<sup>3</sup> Under an alternative assumption to ours - that groups that may initiate conflict are different from those that may run in an election - conflict results if the r.h.s. of equation (21) is positive, i.e. conflict is more likely the higher the resource rents, the lower the labor productivity and the lower the fixed cost  $F$  of conflict. In absence of a fixed cost  $F$  of conflict, conflict always results in this case.

$$V_C^I = \sum_{t=0}^{\infty} \beta^t \left( \frac{1}{4}R - wF \right) = \frac{1}{1-\beta} \left( \frac{1}{4}R - wF \right). \quad (21)$$

A necessary condition for democracy to be a viable alternative to conflict is that  $V_D^I > V_C^I$ , which can be restated as:

$$\beta + F(4\psi + 2) > \left( \psi + \frac{1}{2} - \beta \right) \frac{R}{w}. \quad (22)$$

When  $\psi + \frac{1}{2} < \beta$  the right hand side is negative. Since the left hand side is always positive, the proposition follows. ■

When  $\psi$  is small, economic factors are not very important for voters relative to other characteristics of the candidates. This makes electoral competition weak, increasing the political rents of democracy, and making democracy relatively more attractive for politicians. When  $\beta$  is large, politicians value future income more, or the electoral period is short. The prospect of future rents by competing in elections in the future is then encouraging, and for the loser of the election it is less tempting to try to grab resource rents by initiating a conflict today. In the remainder of the paper we study the case where  $\psi + 1/2 > \beta$ . We then have:

**Proposition 2.** *Democracy is less likely the higher the resource rents relative to labor productivity.*



*Proof:* From (22) we note that the right hand side is increasing in  $R/w$ , while the left hand side is independent of  $R/w$ . Hence higher  $R/w$  makes it less likely that condition (22) is satisfied. ■

Thus, poor resource abundant countries are more likely to end up with conflict, while rich resource poor countries are more likely to end up as democracies.

As seen from equations (20) and (21) - when  $R$  increases, the expected return from participating in conflicts, as well as participating in elections, increases. From equation (20) and (21) we get:

$$\frac{\partial V_D^I}{\partial R} = \frac{\beta}{2(2\psi + 1)(1 - \beta)}. \quad (23)$$

$$\frac{\partial V_C^I}{\partial R} = \frac{1}{4} \left( \frac{1}{1 - \beta} \right). \quad (24)$$

When  $\psi + 1/2 > \beta$ , the expected payoff from conflict increases more with higher resource rents than the expected payoff from election.

For values of the resource rents lower than the critical value:

$$R^* = \frac{\beta + F(4\psi + 2)}{\psi + \frac{1}{2} - \beta} w, \quad (25)$$

the expected return of democracy is higher than the expected return from initiating conflict, and hence in this region a self-enforcing democracy is a possible outcome (given our punishing rule). If resource rents are higher than the critical value  $R^*$ , the expected return from competing in elections, given that the last election is lost, is lower than the expected

return from initiating conflict. Accordingly, in this region the state of the game is conflict. At the margin, conflict allows politicians to capture a larger fraction of increased resource rents than competing in elections. For sufficient resource abundant countries it is then in the politicians' interest to initiate conflict, rather than promote democracy.

On the other hand, a higher level of economy wide productivity,  $w$ , is conflict preventing. From equations (20) and (21) it can be seen that a higher  $w$  increases the expected return from elections and reduces the expected return from conflict. For both reasons the critical value  $R^*$  increases, so that a higher level of the resource rent is tolerated without the economy ending in conflict.

The intuition is that there are four effects on the choice of political equilibrium from higher labor productivity. First, high labor productivity makes it more attractive to be an elected politician. When agents are relatively well off, at the margin they value increased income less than if they are relatively poor. This makes electoral competition less stiff, allowing higher equilibrium rents for politicians. Second, higher labor productivity implies that a higher wage must be paid to build an army, making this strategy more costly. Third, a higher wage means that each unit of fighting effort becomes more costly. Fourth, a higher wage means that the opponent allocates fewer resources to fighting. The latter two effects cancel each other out under the standard probabilistic fighting function, and the two remaining effects explain why higher labor productivity makes democracy more attractive relative to conflict for politicians.

Note that in our model the source of a country's wealth affects the institutional outcome; countries rich because of much natural resource rents end up in conflict, while countries rich because of a high economy wide productivity are more likely to end up as democracies.

Even this very simple model challenges conventional wisdom received from the standard political economy models. We discuss how in the following two propositions.

**Proposition 3.** *Stiff electoral competition (high  $\psi$ ) may produce lower transfers to voters.*

*Proof:* From equations (20) and (21) we note that  $\psi$  decreases the payoff of democracy while leaving the payoff from conflict unchanged. Therefore, a higher  $\psi$  may change the political equilibrium from democracy to conflict. With conflict, politicians have no reason to give direct transfers and the proposition follows. ■

A standard result in models of political economy is that when electoral competition is stiff, the income of voters will be higher (as they get more transfers) and equilibrium rents for politicians will be lower. The reason this need not be the case in our model is that we do not exogenously assume that the institutional outcome is democracy. As a consequence, when electoral competition is sufficiently stiff, democracy does not emerge – and as a consequence – politicians grab all the resource rents and transfers to voters are zero.

**Proposition 4.** *Stiff electoral competition (high  $\psi$ ) may produce an inefficient economic outcome.*

*Proof:* With democracy, aggregate income is given by  $w+R$ . With conflict, aggregate income is given by:

$$w + R - \sum_{I=A,B} (wF^I + wG^I) = w + \frac{1}{2}R - 2wF . \quad (26)$$

As a higher  $\psi$  may change the state from democracy to conflict the proposition follows. ■

Accordingly, we may obtain the paradoxical result that the more voters care about the economic outcome of elections relative to other factors of the candidates (i.e. the higher is  $\psi$ ), the worse is the economic outcome. When voters care more about income, democracy is less likely, and income is lower.

The claim that stronger electoral competition creates economic efficiency has been attacked in an influential paper by Coate and Morris (1995). Criticizing what they term the Chicago view of political competition – that stronger political competition creates economic efficiency – they show that when voters are uncertain of the effects of economic policy, inefficient policies need not be competed away. Bardhan and Yang (2004) provide additional mechanisms. In our model, by contrast, voters have full information and stiff electoral competition may still produce an inefficient economic outcome. In that respect our result is related to Robinson and Torvik (2005), where stronger electoral competition makes inefficient transfers to voters more tempting so as to secure political power. Again, the principal contrast between our mechanism and those found earlier is that our mechanism is driven by the endogenous choice of democracy or conflict, so that with sufficiently strong electoral competition democracy is not a possible equilibrium outcome.

### **III. Concluding remarks**

In this paper, we have developed the first, and we believe simplest, possible setup to study how resource rents affect the political choice between conflict and democracy. In line with

empirical results, resource wealth makes conflict more likely while high income due to high productivity makes democracy more likely.

Higher resource wealth increases the expected payoff from both elections and conflict. However, the choice between the two depends on the relative payoffs. We show that the possibility of achieving a self-sustaining democracy is decreasing in the size of the resource rents. Increased resource wealth thus puts democratic institutions to a survival test. Countries will not pass this test if the resource wealth is sufficiently high, labor productivity sufficiently low, political competition sufficiently strong, or politicians sufficiently short sighted.

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