A Some Defintions

The economic elite produces a good for export that is inelastically supplied to the world market where they have no influence on the price. Production is denoted by y, with $y : K \times L \to \mathbf{R}_+$, such that, $K, L \subset \mathbf{R}_+$. The elite pay a rental price for capital, $r \in \{x : x > 0\}$, which is given exogenously; for simplicity, each member of the elite has one firm and uses one unit of capital. The economic elite pay a wage determined by the type of labor institution established in the economy.

B Non-elite Attraction

Call π^i the fraction of members of W who join elite i, which depends on k_w^i. Let $\pi^i : [0,1] \to [0,1], i = e, p$, such that the following conditions hold:

i. $\pi^i(k_w^i) + \pi^j(k_w^j) \leq 1$;

ii. $\pi^i(k_w^i) < \pi^j(k_w^j)$ iff $k_w^i < k_w^j$; and

iii. $\pi^i(k_w^i) = \pi^j(k_w^j)$ iff $k_w^i = k_w^j$.

Condition i ensures that non-elite participants of the coalition do not exceed their total population. Conditions ii and iii ensure the same technology of attraction for both elites so that the ability to attract the non-elite only depends on k_w^i. To avoid abuse of notation, call $\pi^i \equiv \pi^i(k_w^i), i = e, p$.

Denote k^i the amount of surplus appropriated by the coalition of elite i with W^i, which depends on π^i. Let $k^i : [0,1] \to [0,1], i = e, p$, such that the following conditions hold:

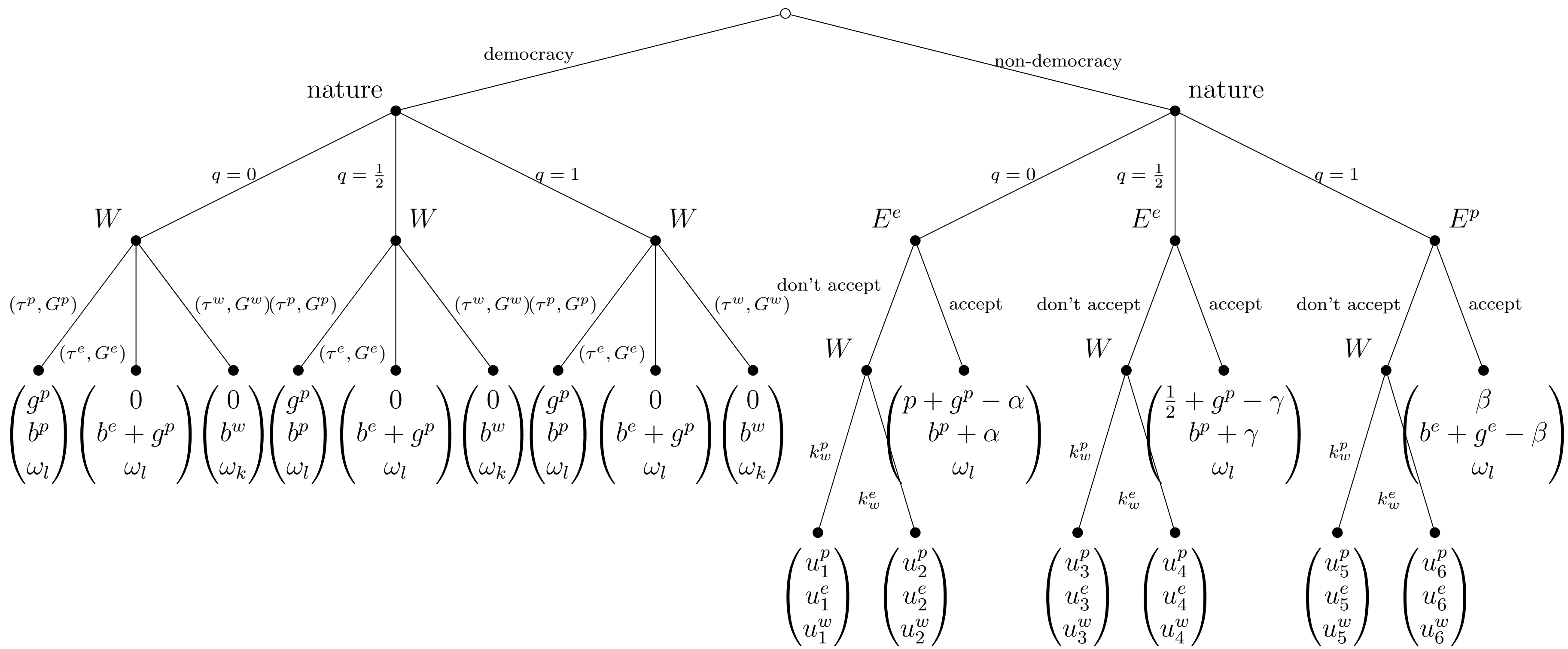
i. $k^i(\pi^i) \leq \mu^j$,

ii. $k^i(\pi^i) < k^j(\pi^j)$ iff $\pi^i < \pi^j$, and

iii. $k^i(\pi^i) = k^j(\pi^j)$ iff $\pi^i = \pi^j$.

The first condition ensures that amount of surplus that elite i and the non-elite extract is not larger than the income that elite j have. The last two conditions ensure that if each elite attracts the same fraction of non-elite, then both have the same capacity of surplus extraction, and if one elite attract more non-elite, then they have more capacity of surplus extraction. To avoid abuse of notation call $k(\pi^i) \equiv k^i(\pi^i), i = e, p$.

C Extensive-form Representation



Payoffs:

- $u_1^p = p + g^p - k_w^p$; $u_1^e = b^p$; $u_1^w = [\omega_k, k_w^p]$.
- $u_2^p = p - k(\pi_e)$; $u_2^e = b^e + k(\pi_e) - k_w^e$; $u_2^w = [\omega_k, k_w^e]$.
- $u_3^p = \frac{1}{2} + g^p + k(\pi^p) - k_w^p$; $u_3^e = \frac{1}{2} - k(\pi^p) + b^p$; $u_3^w = [\omega_k, k_w^p]$.
- $u_4^p = \frac{1}{2} - k(\pi^e)$; $u_4^e = \frac{1}{2} + k(\pi^p) - k_w^e + b^p$; $u_4^w = [\omega_k, k_w^e]$.
- $u_5^p = k(\pi^p) - k_w^p + g^p$; $u_5^e = b^p - = k(\pi^p)$; $u_5^w = [\omega_k, k_w^p]$.
- $u_6^p = 0$; $u_6^e = b^p - k_w^e - g^e$; $u_5^w = [\omega_k, k_w^e]$.

D Proof of Propositions 1 and 2

Below you will find the proof for Proposition 1. Note that Proposition 1 is sub-game perfect.

D.1 Proposition 1

Proof. Let $k_w^p = k_w^e > 0$, and $q = 0$, i.e., the political elite is stronger. At $t = 3$, the non-elite split equally among both elites, $\pi^p = \pi^e$, and both elites are equally likely to win. The political elite obtain $\frac{1}{2}[(1-k_w)+g^p]+\frac{1}{2}[1-k(\pi^e)]$, the economic elite obtain $\frac{1}{2}[k(\pi^e)-k_w)+g^e+b^e]+\frac{1}{2}b^p$, and the non-elite obtain $u^w \in \{\omega_l, k_w^e\}$, depending on whether they joined the coalition or not.

At $t = 2$, the economic elite can accept the offer made by the political elite or confront them. In the latter case the economic elite receive $\frac{1}{2}[k(\pi^e)-k_w)+g^e+b^e]+\frac{1}{2}b^p$. If the political elite establish their preferred policy, the economic elite receive b^p. Note that $b^p < \frac{1}{2}[k(\pi^e)-k_w)+g^e+b^e]+\frac{1}{2}b^p$, i.e., the economic elite prefers the confrontation. Define α to be the amount such that the makes the economic elite indifferent among confronting or not: $b^p+\alpha \equiv \frac{1}{2}[k(\pi^e)-k_w)+g^e+b^e]+\frac{1}{2}b^p$, thus $\alpha = \frac{1}{2}[k(\pi^e)-k_w)+g^e+b^e]-\frac{1}{2}b^p$. Is the political elite able to afford a transfer equal to α to the economic elite? Note that without confrontation the political elite receive $1+g^p$. Suppose $\alpha < 1+g^p$ (so that the political can afford to transfer α to the economic elite), this implies that $\frac{1}{2}[k(\pi^e)-k_w] < 1+\frac{1}{2}g^p$,[1] which is true. Hence, α is within the political elite's budget.

Moreover, the political elite prefer to transfer α to the economic elite than to engage in a confrontation. This statement follows from noting that $\frac{1}{2}[(1-k_w)+g^p]+\frac{1}{2}(1-k(\pi^e)) < 1+g^p-\alpha$, which implies $0 < k_w$, which is true.[2] Therefore, at $t = 1$, the political elite offers α to the economic elite.

At $t = 0$, the elites compare their payoffs from democracy or non-democracy. Note that democracy requires unanimous consent of both elites. Hence, it suffices to show

[1] Using the facts that $y\tau^p = g^p$ and $y\tau^e = g^e$.
[2] Using the facts that $y\tau^p = g^p$ and $y\tau^e = g^e$.

that one elite prefers non-democracy to determine if this is the chosen regime. In a democracy, the political elite obtain 1, clearly they prefer a non-democracy and obtain $1 + g^p - \alpha$.

Thus, at the beginning of the game a non-democracy is chosen, the next period the political elites offer α to the economic elite, then the latter accept and the game ends. □

D.2 Proposition 2

Below you will find the proof for Proposition 2. Note that Proposition 2 is sub-game perfect.

Proof. Note that the economic elite are the stronger elite. At $t = 3$, the non-elite are indifferent among joining either elite, hence $\pi^p = \pi^e$, and both elites are equally likely to win. If a confrontation arises the economic elite receive $\frac{1}{2}[1+b^e+g^e]+\frac{1}{2}[(1-k(\pi^p)+b^e)]$ and the political elite receive $\frac{1}{2}[k(\pi^p) - k_w + g^p]$.

At $t = 2$, the political elite accept or not the offer made by the economic elite. If a confrontation arises, the political elite receive $\frac{1}{2}[k(\pi^p) - k_w + g^p]$, if the economic elite establish their preferred policy, the political elite obtain zero. Thus, the political elite have an incentive to confront. Define β as the transfer that will make the political elite indifferent between confronting or not, then $\beta \equiv \frac{1}{2}[k(\pi^p) - k_w + g^p]$.

At $t = 1$, the economic elite make a take-it-or-leave-it offer of β to the political elite. Note that $0 < 1 + b^e + g^e$ implies $k(\pi^p) - k_w < 1 + b^e + \frac{g^e}{2}$,[3] which is true. Thus the economic elite can afford to transfer β to the political elite. Also note that $\frac{1}{2}[1+b^e+g^e]+\frac{1}{2}[1-k(\pi^p)+b^p] < 1+b^e+g^e-\beta$ iff $y(\tau^p - \tau^e) < k_w$,[4] i.e., the economic elite prefer to transfer β if and only if the difference between tax rates is sufficiently small. Therefore, depending on the difference between tax rates, the economic elite offer β or a transfer of zero.

[3]Using the facts that $y^p = g^p$ and $y^e = g^e$.
[4]Using the facts that $y^p = g^p$ and $y^e = g^e$.

At $t = 0$, both elites decide between a democracy or a non-democracy. Note that in a democracy the economic elite obtain zero, whereas in a non-democracy they always obtain a strictly positive payoff (with or without a confrontation). Hence a non-democracy is chosen, and depending on the difference between tax rates, the economic elite offer β or zero. If the econmic elite offer β, the political elite accepts, and the game ends. If the economic elite offers zero, the political elite do not accept and a confrontation arises. $\square$

E Equilibrium With Symmetric Elites

Proof. After a confrontation the economic elite obtain $\frac{1}{2}[\frac{1}{2} + k(\pi^e) - k_w + g^e + b^e] + \frac{1}{2}[\frac{1}{2} - k(\pi^p)]$ and without a confrontation they obtain $\frac{1}{2} + b^p$. The economic elite prefer a confrontation. Moreover, define γ as the difference of payoffs between confronting minus not confronting, thus $\gamma = \frac{1}{2}(g^e - k_w)$.[5] Suppose that the political elite can afford such transfer, thus $0 < \frac{1}{2} + g^p - \gamma$, this implies $0 < 1 + y(\tau^p - \tau^e) + k_w + y\tau^p$, which is true since all the elements on the right-hand side of the inequality are non-negative.[6]

In a confrontation, the political elite obtain $\frac{1}{2}[k(\pi^p) - k_w + g^p] + \frac{1}{2}[\frac{1}{2} - k(\pi^e)]$; without a confrontation they obtain $\frac{1}{2} + g^p$. Note that $\frac{1}{2}[k(\pi^p) - k_w + g^p] + \frac{1}{2}[\frac{1}{2} - k(\pi^e)] < \frac{1}{2} + g^p - \gamma$, which implies $0 < \frac{1}{4} + \frac{1}{2}y(\tau^p - \tau^e) + k_w$, which is true since all the elements on the righ-hand side of the inequality are non-negative. Therefore, the political elite prefer to offer γ to the economic elite and avoid a confrontation.

In a democracy, the political elite do not obtain rents, but they obtain a strictly positive payoff in a non-democracy. Hence, at $t = 0$, they choose a non-democracy. At $t = 1$, the strength of both elites is realized and both are equally strong. The political elite offer γ to the economic elite. At $t = 2$, the economic elite accept γ, the game ends and payoffs are realized. □

[5] Using the facts that $g^e = y\tau^e$ and $k(\pi^e) = k(\pi^p)$.

[6] Note that $\tau^e \leq \tau^p$, i.e. the tax rate that the economic elite choose will never be greater than the tax rate that the political elite choose.

F Equilibrium With Asymmetric Elites and Confrontation

Proof. Let $\epsilon \in \mathbf{R}$ be arbitrarily close to zero. If the economic elite offer $k_w + \epsilon$ to the non-elite, then $\pi^p < \pi^e$, the economic elite attract the non-elite and win the confrontation. In a confrontation, the economic elite receives $(k(\pi^e) - k_w - \epsilon) + \frac{1}{2} + b^e + g^e$.[7] If there is no confrontation, the economic elite receive $\frac{1}{2} + b^p$.[8] Note that the benefit from the confrontation is greater than that from not confronting. Moreover, define δ as the difference between payoffs. Thus, $\delta = k(\pi^e - k_w - \epsilon) + y\tau^e$.[9] Suppose that the political elite cannot 'afford' to transfer δ, then $\frac{1}{2} + y\tau^p - \delta < 0$. Hence, $\frac{1}{2} - (k(\pi^e) - k_w - \epsilon) < 0$, which implies $\frac{1}{2} < k(\pi^e) - k_w - \epsilon$. Since ϵ is arbitrarily close to zero, the last inequality holds if and only if the term $k(\pi^e) - k_w$ is sufficiently high.

In a democracy the elites obtain a payoff equal to zero. Hence the economic elite will not agree on a democracy. Thus, at $t = 0$ a non-democracy emerges. At $t = 1$, the strength of elites is revealed and shows that both are equally strong. Assuming that $k(\pi^e) - k_w$ is sufficiently high, the political elite make an offer of zero to the economic elite. At $t = 2$, the economic elite do not accept the offer and start a confrontation against the political. At $t = 3$, the non-elite prefer the offer of the economic elite; this coalition wins, the game ends and payoffs are realized. □

[7] The first term is the net surplus obtained from the confrontation, the second term is the return of their asset, the third term is the benefit from production, and the last term is the benefit from the group-specific public good.

[8] The first term is the return to their asset, and the second term is the benefit from production.

[9] Using the fact that $y\tau^e = g^e$.

G Democracy

In the game presented here, democracy is never an equilibrium outcome in a one-shot game. This is a corollary that follows from Propositions 1 and 2. The payoffs that the economic and political elite receive when $q = 0, 1$ are strictly positive and are always in the non-democracy path. The democracy path brings payoffs equal to zero to both elites. Thus, they will never choose this branch of the game. Are there additional conditions that would make democracy a preferable choice for the elites? At best, democracy could bring the same payoff as a non-democracy under very specific conditions.[10] If a confrontation arises and one elite wins, the losing elite obtains a payoff of zero, making a non-democracy equally preferable but this fact would not make democracy an equilibrium; recall that this decision requires agreement between both elites and the elite that win the confrontation would obtain a stricitly positive payoff from a non-democracy. Note also that since the payoffs that the elite receive under a democracy are zero, this path would not emerge as an equilibrium even in a repeated game.

The conclusions presented above depend on the policy outcome that a democracy brings. In this path, the non-elite's policy proposal always wins since the non-elite are the majority. This proposal contains a tax rate that extracts all rents from the elite and uses these revenues for a class-specific public good and establishes a labour institutions consequential for wages. Hence, even though income inequality does not enter this game explicitly, the potential redistributive use of taxes shape policy preferences, choices and the final outcomes. If the use of tax revenues is used for the provision of society-wide public goods, then the elite could obtain a positive payoff in a democracy, but then again, to make this option preferable, these goods should provide a utility higher than what they would obtain in a non-democracy; note that in a non-democracy, the economic elite obtain benefits from holding wages low and the political elite can appropiate part of tax revenues. Thus, even if we relax the

[10] The payoffs in a non-democracy are never negative.

assumption of class-specific public goods, the elite would still prefer a non-democracy.