Identity Politics, Redistribution and Democratic Stability

N. Tolga SINMAZDEMIR
New York University
tolga.sinmazdemir@nyu.edu

PRELIMINARY AND INCOMPLETE

January 15, 2011

Abstract

Recent scholarship on democratic regimes has identified conflict over income redistribution as the key mechanism determining the likelihood of democratic transition and consolidation. However, in several democracies, groups also have conflicting preferences over identity-based policies such as official languages or religions of a state, political autonomy for minorities, or preferential policies favoring members of specific ethnic groups. How does inter-group conflict over these policies in interaction with policies of income redistribution such as taxation or provision of public goods affect chances of democratic stability? I answer this question by constructing a game-theoretic model of two-dimensional electoral competition in which policy-motivated candidates have the option of resorting to violence and subverting democracy if they are dissatisfied with the election results. The model shows that when income distribution is more equal in democracies that don't adopt identity-based policies for the benefit of a minority group, members of this group have *stronger* incentives to initiate a fight on behalf of those policies. I test this prediction by collecting province-level data on the Kurdish insurgency in Turkey where demands for giving Kurdish language official status or granting political autonomy to the Kurdish minority are being rejected. My empirical analysis supports the prediction: In provinces with high levels of public investment, higher levels of per capita GDP *increase* the chances of the insurgents' attacks against civilians.

1 Introduction

Recent scholarship on democratic regimes has identified inter-group conflict over income redistribution as the key mechanism determining the likelihood of democratic consolidation (Przeworski 2005, Benhabib and Przeworski 2006, Acemoglu and Robinson 2006, and Boix 2003). In this body of work, group preferences over policies diverge on the basis of income levels. Hence, the poor support redistribution while the rich are against it. However, in several democracies, groups also have conflicting preferences over identity-based policies such as official languages or religions of a state, political autonomy for minorities, or preferential policies favoring members of specific ethnic groups. What are the conditions under which democracies remain stable when there is inter-group conflict over both identity-based policies and also redistribution of income via taxation and provision of public goods?

In this paper, I analyze the effects of these two sets of policies on democratic stability by constructing a game-theoretic model of two-dimensional electoral competition. In the model, voters differ both in income and an ascriptive trait (which can be language, religion, or race), and policy-motivated candidates have the option of subverting democracy if they are dissatisfied with election results. One dimension of electoral competition is a uniform tax rate, and the second dimension is the decision to implement a potential identity-based policy, which has a fixed cost, is financed out of the public budget and benefits only the members of the minority group.

The model shows that first, when income distribution is *more* equal, poor minorities that demand identity-based policies have stronger incentives to initiate a fight. The intuition underlying this result is the following: An attempt to destabilize the democratic regime by the minority entails the risk of triggering a democratic breakdown dominated by the rich who are against income redistribution. Therefore, the incentives of a poor minority group demanding these policies to turn against democracy get stronger if income distribution is more equal because lower income inequality makes it less costly for this group to turn against democracy. Second, stable democracies at intermediate income levels do not deviate from the status quo on the decision about the identity-based policy due to redistributive consequences of such a deviation for the poor benefiting from the status quo. Third, if deviations to break coalitions lead to inter-group fighting, then there are equilibria of the game in which coalitions between groups with different ascriptive traits redistribute more than coalitions between groups with the same ascriptive traits. In this class of equilibria, the fact that deviations lead to intergroup fighting allows a wide range of redistribution rates to sustain both types of coalitions in the presence of rival platforms that would make both partners of the coalition worse off.

The rest of the paper is organized as follows. The next section provides a brief review of the literature that my paper relates to. In the third section, I present the model. The fourth section solves the model and presents the results including the proposition on the relation between economic equality and minority incentives for initiating a fight. The fifth and sixth sections present empirical tests of this proposition by focusing on the civilian attacks of the Kurdish insurgency in Turkey between 1991 and 2001. In this period, Turkish political elites have rejected demands for making Kurdish an official language or granting political autonomy to the regions where Kurdish-speaking people predominate, and the Kurdish insurgency has been one of the main sources of instability for the Turkish democracy. In the empirical tests, I investigate whether higher levels of economic welfare have a significant effect on the likelihood of attacks at the province-level. The seventh section concludes. All proofs are put in the appendix.

2 Literature Review

My paper relates most closely to the political economy literature on the dynamics of political regimes. This body of formal work has focused on conflict of income redistribution as the key mechanism determining chances of democratization and democratic stability across countries (Boix 2003, Przeworski 2005, Acemoglu and Robinson 2006, Benhabib and Przeworski 2006). Having provided insights into the effects of economic variables such as economic development, income inequality and mobility of productive assets on stability of regimes, these formal models have abstracted away from the effects of other factors such as the level of linguistic or religious diversity of a country and how politicized identities along the lines of language or religion can influence stability of democracies.

Secondly, there is a separate line of research on the choice of economic policy in democracies which has studied policy implications of ethnic diversity through various democratic channels. In this body of work, ethnic diversity and its impact on policy-making have been analyzed by focusing on affirmative action policies, provision of specific public goods, or targeted redistribution via coalition formation between different ethnic and income groups (Roemer 1998, Austen-Smith and Wallerstein, 2006, Huber and Stanig, 2007 and Bandiera and Levy, 2008).[1] In contrast to the literature on political-economic determinants of democratic stability, in this latter set of studies, the relevant actors do not have the option of abolishing the democratic framework in the face of policy choices not preferred by some segment of society.

Finally, there is also a very extensive body of work on institutional prescriptions for stability in ethnically divided societies. The two main approaches in this literature have been consociationalism and the so-called centripetalism. Originally formulated by Lijphart (1969, 1977), consociationalism is rooted in the core idea of explicitly recognizing politically

[1] A relatively recent and extensive review of this literature can be found in Alesina and Ferrara (2005).

relevant ethnic identities in a society. According to this approach, the major principles of this explicit recognition should be grand coalition between major groups, segmental autonomy, proportionality and minority veto.[2]

Following its original formulation, the consociationalist school has had several supporters[3] but has also been criticized by a number of scholars.[4] One of the major objections to consociationalism has been that it does not sufficiently address the incentives of majorities for compromise.[5] Consequently, an alternative approach, dubbed centripetalism, has aimed at de-emphasizing ethnic divisions within a society and moving political competition towards the moderate center away from the extremes by various arrangements, but most importantly by electoral systems that require ethnic groups to cooperate for the purposes of winning elections. The principal proposal of the main proponents of this alternative approach (Horowitz (1985, 1991, 2002), Reilly (1999, 2001, 2006)) for electoral systems has been vote-pooling arrangements that allow for the exchange of votes by ethnically based parties. However, the premise underlying this latter approach is that leaders would always prefer to offer a moderate platform in order to win elections over a non-democratic outcome in which they lose elections but still hold on to power by extra-constitutional means, enact the demands of their core supporters and block policies favored by rival ethnic groups.

3 The Model

My core model is a game between three players who are candidates for political office representing different groups that share the same preferences as those of the candidates. These

[2]In more recent works, Lijphart (2002, 2004) has taken the position that power-sharing and autonomy are "primary" while the latter two principles are "secondary" traits of the consociational approach.

[3]see among others, Daalder (1981, 1984), and Lehmbruch (1974); for a recent empirical attempt to test consociationalist prescriptions for electoral systems, see Norris (2002).

[4]Apart from the works referenced in the text, see e.g. Barry (1975), van Schendelen (1984) and also more recently, Lustick (1997), Bogaards (2000).

[5]see Horowitz (2002) for an example.

candidates are purely policy motivated and are labeled P (representing the poor from the majority group), R (the rich from the majority group) and E (the poor minority). Hence, P and R share the same ascriptive trait while E is the minority. The size of the total population is normalized to 1. Group shares of the population are denoted by n_i with $n_i < \frac{1}{2}$, $n_R = min\{n_P, n_R, n_E\}$ and $\sum_i n_i = 1$. None of these groups comprises a majority of the population by itself, and the rich is the smallest group.

The policy space is two-dimensional: a non-negative tax rate $\tau \ \epsilon$ [0;1] the proceeds of which are redistributed lump-sum to all citizens, and a binary policy decision on whether to implement an identity-based policy[6] $r \ \epsilon \ \{0; 1\}$ which is financed out of the public budget. Hence, the government budget constraint is $\tau y = T + Kr$ where y is the average income of the country, T is the amount of lump-sum transfers and K is a cost parameter that denotes how costly the identity-based policy is. When the identity-based policy is adopted, the minimum tax rate is $\frac{K}{y}$ so that the public budget is at least large enough to finance this policy.

Players' preferences are represented by the following utility function:

$$U_i(\tau, r) = (1 - \tau)\alpha_i y + \tau y - Kr + I_E R$$

where α_i denotes multiples of average income and α_P=$\alpha_E < 1 < \alpha_R$. R and K are positive numbers such that $R > K$ and I_E is an indicator function with

$$I_E = \begin{cases} 1 & \text{if } i = E \text{ and } r = 1 \\ 0 & otherwise \end{cases}$$

Hence, the policy r benefits only the group E and I assume that the net benefit of this policy (the benefit of the policy (which is equal to R) minus the decrease in the amount

[6] Even though identity-based policies are not always binary, it seems reasonable to assume that the particular issue over which preferences of politically relevant groups diverge is singular.

of lump-sum transfer (which is equal to K)) is positive for group E. This policy can be thought of in a variety of ways, such as making the language of the minority an official language, or instituting preferential policies in education and bureaucracy for the members of the minority, or adopting a system of political autonomy that gives the minority self-government rights. Naturally, as the net benefit of this policy for the minority gets larger, their preferences diverge more sharply from the preferences of the other two groups.

The ideal policy of group i is labeled $(\hat{\tau}_i, \hat{r}_i)$. Given their preferences, it is easy to see that the ideal policies of the groups are $(\hat{\tau}_P = 1, \hat{r}_P = 0)$, $(\hat{\tau}_R = 0, \hat{r}_R = 0)$, $(\hat{\tau}_E = 1, \hat{r}_E = 1)$.

The timing of events is as follows:

1. The candidates announce policy platforms (τ^i, r^i) simultaneously in the two-dimensional policy space. Elections are held in which voters vote sincerely for the policy they like most. The platform that receives the highest number of votes wins. I denote this winning platform by (τ^{dem}, r^{dem}) to indicate that it is the democratically elected policy pair. If candidates offer the same policy, voters who like that policy most, split their votes between the candidates that offer the same policy. If there is a tie between candidates, then each wins elections with equal probability.

2. Having seen the results of the elections and the winning platform, candidates simultaneously decide whether to accept the results or to fight to establish an autocratic regime that implements the candidate‘s ideal policy. These actions taken in the second stage are denoted by (a^P, a^R, a^E) where $a^i \: \epsilon \: A^i = \{accept, fight\}$. So if $(a^P, a^R, a^E) = (accept, accept, accept)$ and nobody starts a fight, the winning policy is implemented and the game ends.

If at least one candidate decides not to accept the results, there is a fight. If one candidate decides to fight, the others can either also fight to implement their own ideal policy or they fight the belligerent candidate to preserve the winning policy pair in elections. For instance, if $(a^P, a^R, a^E) = (accept, accept, fight)$, this means that E is fighting to implement its ideal policy while P and R fight against E to preserve the winning policy in elections.[7] If the belligerent candidate wins the fight, he establishes a dictatorship and implements its ideal policy. If the belligerent candidate loses the fight against a candidate that wants to preserve the democratic outcome, the winning policy in elections is implemented. If the belligerent candidate loses the fight against another belligerent candidate, the ideal policy of the victorious group is implemented.

Fighting is costly in that it makes the country poorer by the amount of cy where $c \in (0,1)$ and each group bears a part of this cost in proportion to its market income. So, if there is a fight, while the country loses cy, group i loses '$c\ \alpha_i\ y$'. I assume the cost of fighting to be the same for all kinds of fight, regardless of which candidate fights for what purpose. For instance, if P and R fight against E to maintain the winning policy pair, the cost of this fight is the same as the one where all candidates fight each other to subvert the democratically elected policy pair in their favor.

If there is a fight, the game ends after the fight. The probability of each group i winning in a fight is q_i where $0 < q_i < 1$ and $\sum_i q_i = 1$.

This is an extensive form game with simultaneous moves and perfect information. The strategy profiles in the game consist of the announced policy platforms of each of the three candidates, their actions in the second stage following the elections in which these platforms compete, and also what actions they would take off-the-equilibrium path following the elections if they deviate to a different platform and lead to a different electoral outcome. Hence, the appropriate solution concept is sub-game perfect equilibrium (henceforth, SPE). SPE requires that first, actions taken by players on and off the equilibrium path in the second stage should constitute an equilibrium in those subgames. Second, given those actions, all

[7] Hence, there is an asymmetry in the model in the sense that groups can defend democracy together; but when it comes to subverting it, they have to do it alone. For instance, if P and R fight and E accepts, this means that P and R are fighting *separately* to implement their ideal policies while E is fighting both groups to preserve the winning policy.

players should prefer to offer the platform specified in the strategy profile on the equilibrium path.

4 Equilibrium

4.1 Post-Election Decisions

In order to find the SPE of this game, I will employ backward induction and start from the second stage in which candidates simultaneously decide whether to accept the election results or to start a fight in response. I introduce the following lemma first which specifies the equilibria of the subgames following the election of a generic platform denoted (τ^{dem}, r^{dem}).

Lemma 1 (Equilibria of Post-Election Subgames)**.** *Following electoral victory of any feasible policy platform* (τ^{dem}, r^{dem})*, there is always an equilibrium where all groups fight. There is never an equilibrium where two groups accept while one group fights.*

The logic underlying this lemma is simple: Given that the other two groups j and k fight to implement their ideal policy, and fighting is equally costly for group i regardless of what purpose they fight for, i is also strictly better off fighting for their own ideal policy than to preserve the elected platform unless the elected platform coincides with it. In that case, they are indifferent between fighting and accepting. Also, the elected platform can at best coincide with the ideal policy of one group. Therefore, given that one group is fighting, at least one more group would be better off using its military might to implement its ideal policy rather than to maintain the elected platform. Hence, there is also no equilibrium where two groups accept election results while a third one fights to implement its ideal policy.

This lemma has the following implications for the solution of the game: First, it tells us that only five sets of action out of eight can be equilibria following the elections:

$(a^P = accept, a^R = accept, a^E = accept)$; $(a^P = fight, a^R = fight, a^E = fight)$; $(a^P = accept, a^R = fight, a^E = fight)$; $(a^P = fight, a^R = accept, a^E = fight)$; and $(a^P = fight, a^R = fight, a^E = accept)$. Also, the last three of these equilibria exist in post-election subgames only if the elected platform coincides with P's, R's and E's ideal policy pairs, respectively. And when those equilibria exist, the payoffs of each player from those outcomes and $(a^P = fight, a^R = fight, a^E = fight)$ are the same.[8]

Second, Lemma 1 tells us when subgames following elections have equilibria in which all groups fight, or one of the groups accepts and the other two fight. We still need to find the conditions under which in post-election subgames, there is also an equilibrium in which all groups accept the results.

This means that for each candidate i, we need to find out when the payoff from the elected platform (τ^{dem}, r^{dem}) being accepted by all (which will be denoted by the expression $U_i\{(\tau^{dem}, r^{dem}); (a, a, a)\}$) is not strictly worse off than the payoff from taking the gamble of starting a costly fight as a result of which one might end up in implementing his ideal policy pair (which I will denote by $U_E\{(\tau^{dem}, r^{dem}); (a, a, f)\}$ for E, by $U_P\{(\tau^{dem}, r^{dem}); (f, a, a)\}$ for P and by $U_R\{(\tau^{dem}, r^{dem}); (a, f, a)\}$ for R).

I start with the case where a platform that rejects the identity-based policy $(\tau^{dem}, r^{dem} = 0)$ is elected. For E, accepting the victory of $(\tau^{dem}, 0)$ is better than initiating a fight if

$$U_E\{(\tau^{dem}, 0); (a, a, a)\} = (1 - \tau^{dem})\alpha_P y + \tau^{dem} y \geq$$

$$U_E\{(\tau^{dem}, 0); (a, a, f)\} = q_E[y(1-c) - K + R] + (1 - q_E)[(1 - \tau^{dem})(1-c)\alpha_P y + \tau^{dem} y(1-c)]$$

When E starts a fight, with probability q_E, his supporters win and implement their ideal policy pair of full redistribution of the remaining income of the country following the fight

[8] In the rest of the paper, I will refer to the actions of '*accept*' and '*fight*' by the letters 'a' and 'f'.

and the identity-based policy. With probability $1 - q_E$, they lose the fight and the elected platform is restored.

It is easy to see from this inequality that first, the demand for the identity-based policy which is not met under any elected platform of $(\tau^{dem}, 0)$, can always cause E to initiate a fight either when the country is poor enough that $y < \frac{1}{c} q_E(R - K) = \underline{y}_E$, or the country is richer but E is militarily strong enough ($q_E > \frac{c\alpha_P}{(1-c)(1-\alpha_P)} = \underline{q}_E$) that the gamble for adopting the identity-based policy is still preferred if the elected tax rate τ^{dem} is below $1 - \frac{cy - q_E(R-K)}{y(1-\alpha_P)(c + q_E(1-c))} = \underline{\tau}_E$. Second, note that $\underline{\tau}_E$ decreases as income y increases. This happens because as the country becomes richer, the relative benefit of the identity-based policy becomes smaller compared to the benefit of lump-sum transfers; so the minority prefers to accept election results over taking the risk of fighting at lower tax rates. Because of this influence of rising income on the behavior of the minority, when they are militarily weak ($q_E \leq \underline{q}_E$), there is an income level $y = \overline{y}_E$ above which $\underline{\tau}_E$ becomes non-binding.

The result that E always carries the potential to start a fight for certain values of average income and military strength directly follows from the assumption that the net benefit of the identity-based policy is positive and independent of income. Hence, for sufficiently small values of average income or large chances of winning the fight, no matter how large the costs of fighting and how high the tax rates are, there is always a range of income in which E would prefer to fight for its ideal policy, as long as the net benefit of identity-based policy for E (which is equal to $R - K$) is positive.

For P, accepting the victory of $(\tau^{dem}, 0)$ is better than initiating a fight if

$$U_P\{(\tau^{dem}, 0), (a, a, a)\} = (1 - \tau^{dem})\alpha_P y + \tau^{dem} y \geq$$
$$U_P((\tau^{dem}, 0); (f, a, a)) = q_P y(1 - c) + (1 - q_P)[(1 - \tau^{dem})(1 - c)\alpha_P y + \tau^{dem} y(1 - c)]$$

When P starts a fight, with probability q_P, his group wins and implements its ideal policy of full redistribution of the remaining income of the country following the loss of cy. With probability $1-q_P$, they lose and the elected policy which has been defended by E and R is restored. The decisive factors in P's decision are its chances of winning the fight, and the democratically elected tax rate. Hence, P always accepts the election results when its chances of winning the fight is low enough such that $q_P \leq \frac{c\alpha_P}{(1-c)(1-\alpha_P)} = \underline{q}_P$. If P's chances of winning the fight is above this level, P accepts the results if the tax rate is larger than $\underline{\tau}_P = 1 - \frac{c}{(1-\alpha_P)(c+q_P(1-c))}$. Unsurprisingly, the value of this tax constraint decreases in P's market income share. As its market income increases, P's potential benefit from fighting becomes smaller. Therefore, P prefers to accept the winning policy over fighting for lower tax rates.

Finally, for R, accepting the victory of $(\tau^{dem}, 0)$ is better than initiating a fight if

$$U_R\{(\tau^{dem},0),(a,a,a)\} = (1-\tau^{dem})\alpha_R y + \tau^{dem} y \geq$$

$$U_R((\tau^{dem},0);(a,f,a)) = q_R\alpha_R y(1-c) + (1-q_R)[(1-\tau^{dem})(1-c)\alpha_R y + \tau^{dem} y(1-c)]$$

Similar to the incentives of P, R always accepts the election results when the chances of winning the fight are low enough such that $q_R \leq \underline{q}_R = \frac{c}{(1-c)(\alpha_R-1)}$; otherwise, R accepts the results if the elected tax rate is below $\overline{\tau}_R = \frac{c\alpha_R}{(\alpha_R-1)(c+q_R(1-c))}$ which decreases as his supporters' market income share α_R increases.

What is important in this analysis for the solution of the game is that as the costs of fighting increase, $\underline{\tau}_E$ and $\underline{\tau}_P$ decrease while $\overline{\tau}_R$ increases. We also know that $\underline{\tau}_E$ decreases in y. Therefore, when all groups impose binding tax constraints, there is a range of tax rates, which if elected, is accepted by all groups only when the costs of fighting are high enough and average income is sufficiently high so that $max\{\underline{\tau}_E, \underline{\tau}_P\} < \overline{\tau}_R$. More specifically, there is a $\underline{c}_P^R$ such that when $c > \underline{c}_P^R$, $\underline{\tau}_P < \overline{\tau}_R$. There is also a $\underline{c}_E^R$ and $y > \underline{y}_E^R$ such that when $c > \underline{c}_E^R$ and $y > \underline{y}_E^R$, then $\underline{\tau}_E < \overline{\tau}_R$.

When a platform that adopts the identity-based policy is elected, as before, each candidate compares the payoff from accepting the election outcome to the payoff from starting a fight after the elections. P accepts the election results when $\tau^{dem} \geq 1 - \frac{cy - q_P K}{y(1-\alpha_P)(c + q_P(1-c))} = \underline{\tau}_P^r$. R accepts when $\tau^{dem} \leq \frac{c\alpha_R y - q_R K}{y(\alpha_R - 1)(c + q_R(1-c))} = \overline{\tau}_R^r$. Finally, E accepts when $\tau^{dem} \geq \frac{q_E(1-c)}{c + q_E(1-c)} = \underline{\tau}_E^r$.[9]

Since the identity-based policy is costly and confers no benefits on the members of majority, the lower and upper tax constraints imposed by P and R ($\underline{\tau}_P^r$ and $\overline{\tau}_R^r$) differ from the constraints of the previous case by the terms $\frac{q_P K}{y(1-\alpha_P)(c + q_P(1-c))}$ and $-\frac{q_R K}{y(\alpha_R - 1)(c + q_R(1-c))}$, respectively. Hence, when the identity-based policy is adopted, the range of tax rates tolerated by both groups is narrower compared to the case when it is not adopted. The implication here is that for a country with given average income and income shares, democratic stability is more fragile when the identity-based policy is adopted. Also note that both of these terms become larger in absolute value as the cost of identity-based policy increases.

It must also be noted that as average income y increases, both terms get smaller in absolute terms since the larger the average income, the richer all groups are for a given income share, and therefore, the fixed cost of r becomes less relevant and has a smaller effect on the tax constraints of P and R who oppose the identity-based policy. In the limit, both of these tax constraints imposed by the poor and the rich equal their corresponding tax constraints for the platform without the identity-based policy. A comparison of these two limits shows that there is a value for $q_P = \underline{q}'_P$ such that when $q_P < \underline{q}'_P$, there is an income level $y = y_P^R$ above which $\underline{\tau}_P^r$ is smaller than $\overline{\tau}_R^r$. Also, comparing the limit of $\overline{\tau}_R^r$ and the expression for $\underline{\tau}_E^r$ shows that there is a $c = \hat{c}_E^R$ such that when $c > \hat{c}_E^R$, there is an income

[9]The superscript r denotes that these are tax constraints operating when identity-based policy is enacted.

level $y = y_E^R$ above which $\underline{\tau}_E^r$ is less than $\overline{\tau}_R^r$.

Hence, we reach the following lemma that specifies sufficient conditions under which the victory of an electoral platform is accepted by all groups.

Lemma 2. *In the subgames following the victory of* $(\tau^{dem}, r^{dem} = 0)$*, there exists an equilibrium in which all groups accept the result when* $y \geq \underline{y}_E^R$*,* $c \geq \underline{c} = max\{\underline{c}_P^R, \underline{c}_E^R\}$*, and* $max\{\underline{\tau}_P, \underline{\tau}_E\} \leq \tau^{dem} \leq \overline{\tau}_R$*. In the subgames following the victory of* $(\tau^{dem}, r^{dem} = 1)$*, there exists an equilibrium in which all groups accept the result when* $c \geq \hat{c}_E^R$*,* $q_P < \underline{q}_P'$*,* $y > max\{y_P^R, y_E^R\}$ *and* $max\{\underline{\tau}_E^r, \underline{\tau}_P^r\} \leq \tau^{dem} \leq \overline{\tau}_R^r$*.*

There is a critical implication of Lemmas 1 and 2 also for the candidates' incentives to deviate to alternative offers in the first stage of the game: We now know that if candidates deviate to offers other than those on the equilibrium path, in those subgames off-the-equilibrium path, either all groups accept the new winner of the elections, or all groups fight each other, or one group accepts while the other two fight in which case the utility of players is the same as in the case of all groups fighting each other. A new winning policy, if all groups accept the election results, makes the candidate either better off, worse off or indifferent (as for instance, in cases where the new winner is the same with the old winner) compared to their payoff from the outcome on the equilibrium path.

Hence, candidates would always have incentives to deviate to platforms that lead to a new winning platform which makes them better off if the equilibrium of the subgame after the victory of that platform is that all groups accept the election results. Below, when I solve the game for SPE, first I assume that the equilibrium in those subgames *off-the equilibrium path* is (f, f, f). Then, I derive additional conditions under which those subgames *only* have (f, f, f) equilibria. These additional conditions ensure that candidates have no incentive to deviate to alternative platforms and cause a cycling of the winning policy in the two-dimensional policy space as long as they do not prefer an inter-group fighting over the outcome on the equilibrium path.

4.2 Platform Choices

Having analyzed the equilibria of the subgames in the second stage, I move to the first stage of platform offers. I limit the analysis to a specific set of possible strategies here: I focus on offers where on the equilibrium path, candidates offer their individual ideal policies or they offer joint platforms with at least one more candidate. This joint platform does not coincide with the ideal policy of one of the players and therefore, it constitutes a compromise between the candidates that offer it. Moreover, candidates offer a joint platform only if their voters strictly prefer this joint platform over the platform offered by the third candidate and if the joint platform wins the elections with certainty. I will denote policy offers of single candidates by (τ^i, r^i) and joint offers by more than one candidate such as i and j by (τ^{ij}, r^{ij}). For instance, (τ^R, r^R) always denotes the offer of R while (τ^{PR}, r^{PR}) could be any feasible policy platform that does not coincide with the ideal policy pair of R or P. I highlight this restriction for the platform offers on the equilibrium path in the assumption below.

Assumption 1. *On the equilibrium path, candidate i offers either his ideal policy pair $(\hat{\tau}^i, \hat{r}^i)$ alone or he offers $(\tau^i = \tau^j, r^i = r^j)$ and wins the elections.*

So, if in equilibrium, two candidates offer the same platform and win the elections, they both receive the same number of votes and each wins with probability of $\frac{1}{2}$. Since the platforms they offer are the same, in the analysis below, I will refer to winning platforms rather than winning candidates also in the case of joint platforms. Moreover, since the utility of the candidates depend exclusively on the policy choices and not on any office-related benefits, the utility of a candidate i from the victory of a joint platform with j is the same regardless of who is elected to the office. Finally, I put no restriction on players' behavior off the equilibrium path so they can deviate to any point on the feasible policy space.

Hence, translated into the language of this game, in order to answer the question of how identity-based policies affect chances of democratic stability, given Lemma 1, 2, and Assumption 1, I will find conditions under which on the equilibrium path, candidates choose

$$\{((\tau^P, r^P), (\tau^R, r^R), (\tau^E, r^E)); (accept, accept, accept)\}$$

and a platform denoted by $(\tau^{dem}, r^{dem} = 0)$ or $(\tau^{dem}, r^{dem} = 1)$ wins the elections.

If $(\tau^{dem}, r^{dem} = 0)$ wins, it will be a case of democratic stability with no identity-based policy while if $(\tau^{dem}, r^{dem} = 1)$ wins, it will be a case of democratic stability coupled with the identity-based policy. I start with the former case.

4.2.1 Democratic Stability in the Absence of Identity-Based Policy

Given that no group constitutes a majority by itself, I focus on equilibria in which candidates come together and offer joint platforms that make them better off than other available alternatives. Also, in this type of equilibria, the elected tax rates will be strictly between zero and one which also make it empirically more plausible. One equilibrium that fits this characterization is that P and R join forces and offer the same redistribution platform in order to block the identity-based policy. The conditions for the existence of this equilibrium is analyzed in the next three propositions.

Proposition 1 (Equilibrium without Identity-Based Policy under Homogeneous Majority Coalition)**.** $(\tau^{PR}, r^{PR} = 0)$ *wins the elections if the platforms are* $\{(\tau^{PR} > 1 - \dfrac{K}{y(1-\alpha_P)} = \hat{\tau}^{PR}, r^{PR} = 0), (\tau^E = 1, r^E = 1)\}$ *and* $\frac{1}{2}(n_P + n_R) > n_E$.

There are two critical aspects of this joint platform $(\tau^{PR}, 0)$. First, since P and R offer exactly the same tax rate, their supporters split their votes among both offers; but each receives a vote share that is larger than what E gets and the platform of $(\tau^{PR}, 0)$ wins the elections with certainty. Since the rich is the smallest group, P has to be the largest group for this to happen.[10] Second, the tax rate of this joint offer τ^{PR} has to be above a certain threshold value; otherwise, the supporters of P are better off with E's offer and vote for that platform. The expression for the lower threshold of τ^{PR} $(1 - \frac{K}{y(1-\alpha_P)})$ captures the net increase in P's payoff if the minority candidate's offer gets elected. It consists of the increase due to full redistribution minus the cost of identity-based policy as a share of the transfers P would have received in the absence of identity-based policy. Not surprisingly, $\hat{\tau}^{PR}$ decreases in the cost of identity-based policy. The impact of changes in average income on $\hat{\tau}^{PR}$ is critical for the rest of the analysis and is described in the corollary below.

Corollary 1. *The minimum tax rate $\hat{\tau}^{PR}$, which P and R can propose jointly as part of their joint platform and win the elections, increases as average income y increases.*

Corollary 1 follows from the fact that when faced with E's offer of (1,1) and $(\tau^{PR}, 0)$, supporters of P make a choice between a platform committed to high redistribution and identity-based policy versus a platform that calls for less redistribution but no identity-based policy. And since P prefers a platform for lower redistribution because of the cost of the identity-based policy that is independent of the average income of the country, as the average income increases, this cost becomes relatively small compared to the decrease in absolute amounts in redistribution because of lower taxes. Hence, as average income increases, for a given market income share of α_P, the minimum tax rate at which P voters continue to vote for the joint platform of P and R in exchange for blocking the identity-based

[10] Note that E and P can also offer a joint platform $(\tau^{PE} < 1, 0)$ and win for sure against R's offer of $(0, 0)$. However, this would be a coalition of E with P where E would give up its demand for identity-based policy in order to adopt a policy of high redistribution with P against R. Since my focus is on how conflicts over the identity-based policy affect chances of democratic stability, and the group E is the one with a demand for identity-based policy, I don't analyze that SPE here.

policy increases as well.

By Lemma 2 which tells us when all groups accept the victory of a generic ($\tau^{dem}, r^{dem} = 0$), and Proposition 1, we derive the following proposition that lists sufficient conditions under which all groups accept the victory of ($\tau^{PR}, r^{PR} = 0$):

Proposition 2. *When $q_R \leq \underline{q}_R$, in the subgame following the victory of $(\tau^{PR} > \hat{\tau}^{PR}, 0)$, there exists an equilibrium in which all groups accept the results if $y \geq \underline{y}_E$ and $\tau^{PR} \geq max\{\underline{\tau}_P, \underline{\tau}_E\}$. When $q_R > \underline{q}_R$, in the subgame follwing the victory of $(\tau^{PR} > \hat{\tau}^{PR}, 0)$, there exists an equilibrium in which all groups accept the results if $\underline{y}_E^R \leq y < y_{\tau^{PR}}^{\overline{\tau}^R}$, $c \geq \underline{c}$, $max\{\underline{\tau}_P, \underline{\tau}_E\} \leq \tau^{PR} \leq \overline{\tau}_R$ and $R < EK$ where $E > 1$. The expressions for $y_{\tau^{PR}}^{\overline{\tau}^R}$, $\underline{c}, E$ are in the proof in the appendix.*

First, note that the conditions in this proposition distinguish between two cases. In the first one, the rich is militarily not strong enough to impose a binding tax constraint; so as long as the country is sufficiently rich and the elected tax rate τ^{PR} is above the constraints imposed by the poor, the winning platform is accepted by all groups. In the second case, the rich is militarily strong and there is a binding upper tax constraint imposed by them. We know that $\tau^{PR} > \hat{\tau}^{PR} = 1 - \dfrac{K}{y(1-\alpha_P)}$ which increases in income. Hence, if there is a maximum tax rate tolerated by the rich, there is an income level above which the tax rates that win the elections become larger than this maximum tax rate. This threshold income level is found by comparing $1 - \dfrac{K}{y(1-\alpha_P)}$ to $\overline{\tau}_R$; and it is equal to $\dfrac{K(\alpha_R - 1)(c + q_R(1-c))}{(1-\alpha_P)(q_R(1-c)(\alpha_R - 1) - c)} = y_{\tau^{PR}}^{\overline{\tau}^R}$.[11]

Hence, one surprising implication of this analysis is that in cases where the rich is militarily strong, they can form a coalition with P for the purpose of bringing about a stable democracy that blocks the identity-based policy only *below* a certain income level.

Also, since $\underline{y}_E^R$ (which is the threshold income level introduced in Lemma 2 above which

[11]The superscript ($\overline{\tau}^R$) and the subscript (τ^{PR}) denote that this is the threshold level for income y below which $\overline{\tau}^R$ is larger than τ^{PR}.

$\underline{\tau}_E < \overline{\tau}_R$) increases in the net payoff of E from the identity-based policy captured by $R-K$, this payoff should not be too large so that there is a range of income (denoted by $\underline{y}_E^R \leq y < y_{\tau^{PR}}^{\overline{\tau}^R}$ in the proposition) and tax rates that keep both E peaceful in the absence of identity-based policy and also do not turn the rich against the strategy of offering a joint platform with P. If the elected tax rate τ^{PR} falls within this range (denoted by $max\{\underline{\tau}_P, \underline{\tau}_E\} \leq \tau^{PR} \leq \overline{\tau}_R$), all groups accept the election results.

The last step in the solution of the game for SPE is the analysis of candidates' incentives to deviate. Here, first I will assume that in subgames following the victory of electoral platforms which make a deviating candidate better off, the equilibrium is that all groups fight each other. Then, I will derive conditions under which this assumption holds.

The minority group is the losing party here so I start with E's incentives to deviate which depend on the comparison of their payoff from the offer of the coalition and the gamble of initiating an inter-group fight. The minority will have no such incentives if

$$U_E((\tau^{PR}, 0); (a, a, a)) = (1 - \tau^{PR})\alpha_P y + \tau^{PR} y \geq$$
$$U_E(f, f, f) = q_P(1 - c)y + q_R \alpha_P y(1 - c) + q_E(y(1 - c) - K + R)$$

E's payoff from the outcome on the equilibrium path is $(1 - \tau^{PR})\alpha_P y + \tau^{PR} y$ where E pays the tax rate of τ^{PR} and receives back the amount of $\tau^{PR} y$. E's payoff from inter-group fighting is $(1 - q_R)(1 - c)y + q_R(1 - c)\alpha_P y + q_E(R - K)$ where with probability $(1 - q_R)$, P or E win the fight and adopt full redistribution of the remaining income of the country following the fight. With probability q_R, R wins the fight and E is left with its market income share minus the incurred costs of fighting; and with probability q_E, E wins the fight and also implements the identity-based policy.

The comparison of these payoffs is identical to a comparison between E's expected payoff from winning the fight and implementing the identity-based policy ($q_E(R-K)$) and E's expected change in monetary payoff from fighting which is equal to $y[\alpha_P+(1-\alpha_P)\tau^{PR}-(1-c)(1-q_R(1-\alpha_P)]$. The first two terms in square brackets is E's payoff from the democratic outcome on the equilibrium path while the last term captures E's expected monetary payoff from inter-group fighting. So, if this expression is positive, E expects a monetary loss from inter-group fighting, while if this expression is negative, then E expects a monetary gain. This implies that for sufficiently small tax rates τ^{PR}, E's expected change in monetary payoff is positive. More specifically, if $\tau^{PR} \leq 1 - q_R(1-c) - \dfrac{c}{1-\alpha_P} = \underline{\tau}^{PR}$, E expects monetary gains from fighting and hence prefers an inter-group fight over the democratic outcome on the equilibrium path.

However, if τ^{PR} is greater than $\underline{\tau}^{PR}$, then E faces a trade-off between fighting to adopt the identity-based policy versus incurring monetary costs of fighting. Depending on how large these costs are, E either prefers the democratic outcome or inter-group fighting. If the income of the country is below a certain level $\underline{y}_E^{fff} = \dfrac{q_E(R-K)}{\alpha_P + (1-\alpha_P)\tau^{PR} - (1-c)(1-q_R(1-\alpha_P))}$, these costs become small enough compared to $q_E(R-K)$ so that E prefers inter-group fighting below this income threshold.[12]

This threshold $\underline{y}_E^{fff}$ depends on E's market income share since E's expected monetary cost of inter-group fighting is a function of α_P. The net effect of E's market income share on this cost is captured by the derivative $1-\tau^{PR}-q_R(1-c)$. If this expression is positive, then E's expected monetary cost from inter-group fighting increases as its income share increases. However, if this expression is negative, then E's expected monetary cost *decreases* as its income share increases.

The factors underlying the decision of E to initiate a fight can be understood by studying this derivative which captures two different causal forces that together determine the net

[12]The superscript implies that the group does not prefer an outcome in which all groups fight each other.

effect of a higher market income share on E's incentives to fight. On the one hand, since fighting may lead to a regime dominated by the rich who oppose income redistribution, E has less to fear from that regime as their market income independent of lump-sum transfers gets larger. This force makes fighting a more attractive option for the minority as their market income increases. It is captured by the term $-q_R(1-c)$ which gets more negative as the chances of the rich winning a fight (q_R) increases.

On the other hand, as their market income increases, E also has more to lose from subverting the democratic regime which allows them to keep their market income and improve it by lump-sum transfers. However, as the redistribution rates get higher, the value of democracy for groups with different market income shares converges. This is captured by the expression $1-\tau^{PR}$ which gets smaller as τ^{PR} increases. Therefore, if the coalition of P and R adopts sufficiently high redistribution rates, then the former causal force dominates the latter and the minority becomes more likely to fight as its market income *increases.*

This possibility is reflected in the fact that the derivative $1-\tau^{PR}-q_R(1-c)$ becomes negative only if both τ^{PR} and q_R is sufficiently large. More specifically, when $\tau^{PR} > 1 - q_R(1-c) = \overline{\tau}^{PR}$, redistribution rates and the chances of the rich winning the fight are high enough so that E's expected monetary cost of inter-group fighting decreases as α_P increases. Therefore, the minority opts for fighting for a wider range of average incomes.

The analysis of the incentives of the minority to deviate in order to initiate an inter-group fight is summarized in the proposition below.

Proposition 3. *If $\tau^{PR} \leq \underline{\tau}^{PR}$, E always prefers an inter-group fight over a stable democracy in which $(\tau^{PR}, 0)$ wins the elections. If $\tau^{PR} > \underline{\tau}^{PR}$, E prefers inter-group fight over a stable democracy in which $(\tau^{PR}, 0)$ wins the elections when $y < \underline{y}_E^{fff}$. When $\underline{\tau}^{PR} < \tau^{PR} \leq \overline{\tau}^{PR}$, $\underline{y}_E^{fff}$ decreases in α_P. When $\tau^{PR} > \overline{\tau}^{PR}$, $\underline{y}_E^{fff}$ increases in α_P.*

Similarly for P and R, we need to find the conditions under which they do not prefer an inter-group fight over the winning policy of $(\tau^{PR}, 0)$ being accepted by all. The comparison of their payoffs from the outcome on the equilibrium path and their expected payoff from inter-group fight gives an upper and lower constraint on τ^{PR}. If τ^{PR} falls within the range defined by these constraints, neither candidate has an incentive to deviate to a different platform.

Hence, the preceding analysis leads to the following proposition that provides sufficient conditions for the SPE in which the candidates P and R offer the same platform that wins the elections, all groups accept the results, and no candidate has an incentive to deviate to a different platform under the assumption that the victory of an alternative offer would lead to inter-group fighting.

Proposition 4. *There exists a SPE in which on the equilibrium path, candidates choose* $\{(\tau^{PR}, r^{PR} = 0), (\tau^E = 1, r^E = 1); (accept, accept, accept)\}$ *and* $(\tau^{PR}, 0)$ *wins the elections if* $\frac{1}{2}(n_P + n_R) > n_E$, $q_R \leq \underline{q}_R$, $\tau^{PR} > max\{\hat{\tau}^{PR}, \underline{\tau}_E^{fff}, \underline{\tau}_P, \underline{\tau}_E\}$, $y > max\{\underline{y}_E^{fff}, \underline{y}_E\}$, *and* (f, f, f) *is the equilibrium in post-election subgames of platforms that make the deviator better off.*

The conditions in the proposition are intuitive. The joint offer τ^{PR} needs to be large enough so that P votes for it and both P and E accept the results given others also accept it. Also, the tax rate and the income level are sufficiently large so that the poor prefer election results being accepted by all over triggering an inter-group fight by deviating to a different platform. Finally, note that since the rich is not militarily strong enough, there is no upper tax constraint imposed by the rich.

Now, I will find the conditions under which the victory of an alternative offer would lead to inter-group fighting and analyze candidates' incentives to deviate. I start again with the incentives of the minority. Figure 1 shows how deviations of E can change the winner of elections.

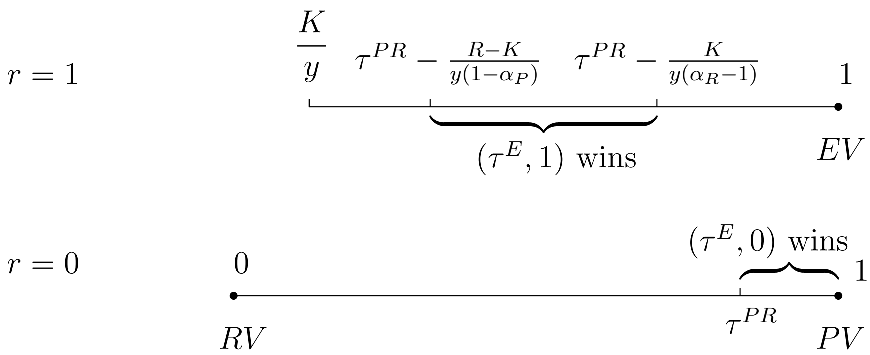


Figure 1. Change in the winning policy when E deviates from (1,1) to (τ^E, r^E)
RV, PV, EV denote ideal policies of voters of R, P, and E.

First, note that the minority would prefer a tax rate which is higher than the coalition offer even without the identity-based policy. The same is true also for P; therefore any such offer would beat the coalition offer in the elections. Because of this, if the equilibrium of the subgame following E's victory is that this new winning policy is accepted by all, E would prefer to deviate to a tax rate higher than the coalition offer. E would have no such incentives if he knows that any deviation to a higher tax rate will lead to inter-group fighting for sure which happens when the coalition offer τ^{PR} is exactly equal to the maximum tax rate $\overline{\tau}_R$ that the rich tolerates. Then, the only equilibrium of the subgames that follow the victory of $(\tau > \tau^{PR}, 0)$ is that all groups fight each other.

Second, E can also offer a tax rate along with the identity-based policy which is low enough to convince the rich and high enough to keep his own supporters to vote for it instead of $(\tau^{PR}, 0)$, and if the equilibrium of the subgame following E's victory is that it is accepted by all groups, supporters of E would prefer this outcome over $(\tau^{PR}, 0)$. This option exists only if two conditions are met simultaneously. First, the policy of identity-based policy should not be too costly so that there is a range of tax rates that make both E and R better off. Comparing the payoffs of E under $(\tau^{PR}, 0)$ and $(\tau, 1)$, we find that his supporters would vote for an offer $(\tau, 1)$ over $(\tau^{PR}, 0)$ if $\tau > \tau^{PR} - \dfrac{R-K}{y(1-\alpha_P)}$. This inequality captures the willingness of the minority to agree on a smaller tax rate than τ^{PR} in exchange for the identity-based policy. The extent to which the minority is willing to give up redistribution depends on the net benefit of identity-based policy $(R-K)$ weighted by how far their income is from the average and hence how much they value redistribution $(y(1-\alpha_P))$. The larger $R-K$, the lower the tax rates the minority is willing to agree to in exchange for the identity-based policy.

In turn, the rich voters would vote for this offer if $\tau < \tau^{PR} - \dfrac{K}{y(\alpha_R - 1)}$. Since the adoption of identity-based policy means extra costs for the rich, they agree on this offer only if the tax rate is sufficiently lower than the rate τ^{PR} offered by their candidate. How much they ask for a decrease in taxes also depends on the cost of the identity-based policy weighted by how wealthier they are compared to the average and hence how much they dislike taxation. As the cost of the identity-based policy increases, the tax rate they demand in return for supporting this policy decreases as well. So, if this cost is sufficiently high, there will be no range of tax rates that both the rich and the minority prefer to the joint offer of the candidates P and R, which is τ^{PR}.

Also note that even if the cost of identity-based policy is low enough so that E can win the elections by deviating to $(\tau^{PR} - \dfrac{R-K}{y(1-\alpha_P)} < \tau < \tau^{PR} - \dfrac{K}{y(\alpha_R - 1)}, 1)$, if this tax rate falls below the minimum tax rate that P would tolerate along with the identity-based policy (which is denoted by τ_P^r in Lemma 2), E would not have any incentive to make this offer unless E also prefers an inter-group fighting to the platform of $(\tau^{PR}, 0)$. Therefore, in order for this deterrence mechanism to be effective, the tax rates that P tolerates along with the identity-based policy should be high. We know that the minimum of these tax rates tolerated by P, τ_P^r, is equal to $1 - \dfrac{cy - q_P K}{y(1-\alpha_P)(c + q_P(1-c))}$. We also know that for a given tax rate, as a country gets richer, it spends a lower share of their public revenues on financing the identity-based policy. Therefore, given its market income share and costs of fighting, the redistribution rates coupled with identity-based policy that P accepts over fighting also decrease in income. This implies that this deterrence mechanism is effective only *below* a certain average income level of the country which I will denote by $\underline{y}'_P$.

To sum, when either the identity-based policy is costly enough or this deterrence mechanism is effective, E would not deviate to $(\tau, 1)$ unless E also prefers an inter-group fighting to the platform of $(\tau^{PR}, 0)$ being elected and accepted by all. Hence, we reach the following proposition:

Proposition 5. *If $\tau^{PR} = \underline{\tau}_R$ and $U_E((\tau^{PR}, 0); (a, a, a)) \geq U_E(f, f, f)$, E has no incentives to deviate to $(\tau, 1)$ if $K > \underline{K}$ or if $\underline{\tau}_P^r > \tau^{PR} - \dfrac{K}{y(\alpha_R - 1)}$ which holds when $y < \underline{y}'_P$. The expressions for $\underline{K}$ and $\underline{y}'_P$ are in the proof in the appendix.*

To move to the incentives of the rest of the candidates to deviate, given that the coalition offer τ^{PR} is equal to the maximum tax rate that the rich tolerates($\overline{\tau}_R$), P would also have no incentives to deviate to higher tax rates if they also do not prefer an inter-group fight over the winning policy $(\tau^{PR}, 0)$, even though that offer would win the elections since supporters of P are the most numerous group. Then, P also would not have incentives to deviate to the rest of the policy space since all those points, if they win the elections and all groups accept it, would make his supporters worse off. Finally, the candidate of the rich can not change the winning policy to their benefit by deviating since rich voters are the smallest group. So, the conditions under which both candidates have no incentives to deviate remain the same as before.

The preceding analysis leads to the following proposition that provides sufficient conditions for the SPE in which the candidates of the majority offer the same platform that wins the elections, all groups accept the results and no candidate has an incentive to deviate to a different platform.

Proposition 6. *There exists a SPE in which on the equilibrium path, candidates choose* $\{(\tau^{PR}, r^{PR} = 0), (\tau^{E} = 1, r^{E} = 1); (accept, accept, accept)\}$ *and* $(\tau^{PR}, 0)$ *wins the elections when* $\frac{1}{2}(n_P + n_R) > n_E$, $q_R > \underline{q}_R$, $c > \hat{c} = max\{\underline{c}, \underline{c}'\}$, $R < min\{EK, FK, GK\}$, $\tau^{PR} = \overline{\tau}^R$ *and* $\underline{y} \leq y < min\{y^{\overline{\tau}^R}_{\tau^{PR}}, \underline{y}'_P\}$ *where* $0 < \hat{c} < 1$ *and* $min\{E, F, G\} > 1$*. The expressions for* $\hat{c}$, E, F, G, $\underline{y}$ *are in the proof in the appendix.*

All the conditions in the proposition are familiar given the analysis preceding it. The candidates of the majority agree on a joint platform of redistribution that blocks the identity-based policy. The platform that they agree on is the maximum possible tax rate that the rich tolerate. Therefore, P has no incentives to offer a higher tax rate and win the elections by only the votes of their own supporters unless they prefer an inter-group fight which is the only outcome that this deviation could trigger. Since fighting is sufficiently costly ($c > \hat{c}$), P has no such incentives. E has no incentives to deviate to $(\tau^{PR} - \dfrac{R-K}{y(1-\alpha_P)} < \tau < \tau^{PR} - \dfrac{K}{y(\alpha_R - 1)}$, 1) and win the elections since P would respond to this by starting a fight. Given the amount of redistribution, the costs of fighting and average income of the country ($y > \underline{y}$), E does not prefer inter-group fighting over the stable democracy that blocks the identity-based policy. However, this threat of P is credible only below a certain income level denoted by $\underline{y}'_P$. Moreover, this coalition is sustainable only below a certain income level for a second reason. As the country becomes richer, the compromise on redistribution that P is willing to make decreases and becomes too costly for the rich in terms of the tax rates. Hence, we have the second upper income threshold $y^{\overline{\tau}^R}_{\tau^{PR}}$. Finally, the income levels above which the minority has no incentives to start a fight unilaterally ($\underline{y}^R_E$) or to trigger an inter-group fighting by deviating to a different platform ($\underline{y}^{fff}_E$) increase in the net benefit of identity-based policy $(R - K)$. This net benefit is not too large so that there is a range of income in which the

SPE described above exists.

4.2.2 Democratic Stability in the Presence of Identity-Based Policy

There are two separate cases in which democratic stability prevails in the presence of an identity-based policy. The elected policy platform is $(\frac{K}{y} \leq \tau^{dem} < 1, r^{dem} = 0)$ or $(\tau^{dem} = 1, r^{dem} = 1)$, and all groups accept the election results. In order to focus on more plausible cases, I will not analyze the latter case where the minority gets its ideal policy pair implemented and all groups accept this result which only would happen when the minority is the plurality.

Below, I will analyze the first case in which the poor minority and the rich jointly offer a platform based on a compromise on redistribution which the minority agrees on, in order to get the support of the rich in exchange for the identity-based policy.

Proposition 7 (Equilibrium with Identity-Based Policy under a Heterogeneous Coalition)**.** *When the platform offers are* $\{(\tau^P = 1, r^P = 0), (\tau^{RE}, r^{RE} = 1)\}$, $(\tau^{RE}, r^{RE} = 1)$ *wins the elections if* $1 - \frac{R-K}{y(1-\alpha_P)} < \tau^{RE} < 1 - \frac{K}{y(\alpha_R - 1)}$, $\frac{1}{2}(n_E + n_R) > n_P$, *and* $K \leq min\{\frac{R(\alpha_R - 1)}{\alpha_R - \alpha_P}, \frac{y(\alpha_R - 1)}{\alpha_R}\}$.

The conditions of this proposition are already familiar because of the analysis of E's incentives to deviate in the case of the homogenous coalition. This time, it is the minority that is willing to compromise on its redistribution demands in order to get the support of the rich for implementing the identity-based policy. This identity-based policy is not too costly so that there is a range of tax rates that both the minority and the rich prefer over the alternative of P's offer, which is $(\tau^P = 1, r^P = 0)$. So, the candidates of the rich and the minority offer the same redistribution rate τ^{RE} that falls in that range. Their supporters split their votes between both, but since each receives more votes than what P receives, the platform ($\tau^{RE}, r^{RE} = 1$) wins the elections. The following corollary highlights that, as in the case of majority coalition of the poor and the rich, as the country gets wealthier, the poor minority also demands higher redistribution rates to join the rich in a coalition.

Corollary 2. *The minimum tax rate* $\hat{\tau}^{RE} = 1 - \dfrac{R-K}{y(1-\alpha_P)}$, *which E and R can propose jointly as part of their joint platform and win the elections, increases as average income y increases.*

Corollary 2 also follows from the fact that when faced with P's offer of (1,0) and (τ^{RE}, 1), supporters of the minority make a choice between a platform committed to full redistribution and no identity-based policy versus a platform that calls for less redistribution along with identity-based policy. And since the minority prefers a platform for lower redistribution because of the net benefit of identity-based policy that is independent of the average income of the country, as the average income increases, this net benefit becomes relatively small compared to the decrease in absolute amounts in redistribution because of lower taxes. Hence, as average income increases, for a given market income share of α_P, the minimum tax rate at which minority voters continue to vote for the joint platform of their candidate with the rich in exchange for identity-based policy increases as well.

By Lemma 2 and Proposition 7, we get the following result:

Proposition 8. *a) When* $q_R < \underline{q}_R$, *in the subgame following the victory of* $(\tau^{RE}, 1)$, *there is an equilibrium in which all groups accept the results when* $max\{\underline{\tau}^r_P, \underline{\tau}^r_E, \hat{\tau}^{RE}\} = \underline{\tau}^{RE} < \tau^{RE} < 1 - \dfrac{K}{y(\alpha_R - 1)}$ *and* $y > \underline{\hat{y}}$. *b) When* $q_R \geq \underline{q}_R$, *in the subgame following the victory of* $(\tau^{RE}, 1)$, *there is an equilibrium in which all groups accept the results when* $c \geq \hat{c}^R_E$, $q_P < \underline{q}'_P$, $R > gK$, $\underline{\tau}^{RE} < \tau^{RE} < \overline{\tau}^{RE}$ *and* $\underline{\hat{y}}' < y < \underline{y}_E^{\overline{\tau}^r_R}$ *where* $\overline{\tau}^{RE} = min\{\overline{\tau}^r_R, 1 - \dfrac{K}{y(\alpha_R - 1)}\}$ *and* $g > 1$. *The expressions for* $\hat{c}^R_E, \underline{q}'_P$, g, $\underline{\hat{y}}$, $\underline{\hat{y}}'$ *and* $\underline{y}_E^{\overline{\tau}^r_R}$ *are in the proof in the appendix.*

The intuition underlying the conditions in the proposition that were not introduced before is the following: Even though we know that under the conditions specified in Lemma

2, there is a range of tax rates where all groups accept the victory of a platform that adopts the identity-based policy, we also need to ensure that this range overlaps with the platform ($\tau^{RE}, r^{RE} = 1$) that wins the elections by the votes of the minority and the rich. I distinguish between the case where the rich are militarily strong and therefore impose a binding tax constraint and the case where they do not. If they do not impose a binding tax constraint, then the winning policy of ($\tau^{RE}, 1$) is accepted by all groups if it is above the lower tax constraints of the poor. The tax rates that convince the rich to vote for the joint offer (which we know are less than $1 - \frac{K}{y(\alpha_R - 1)}$) should also be larger than these lower tax constraints ($\underline{\tau}^r_P, \underline{\tau}^r_E$) imposed by the poor groups. As it can be easily seen, the maximum tax rate at which the rich still vote for the joint platform instead of $(1, 0)$ increases in income. Also, the lower tax constraint of P decreases in average income; hence this condition is met above a certain income level denoted by $\underline{\hat{y}}$ in the proposition.

If the rich impose a binding tax constraint, then in addition to the conditions for the former case, the minimum tax rate at which the minority still votes for the joint platform ($1 - \frac{R - K}{y(1 - \alpha_P)}$) has to be less than the upper tax constraint $\overline{\tau}^r_R$. The benefit of identity-based policy for the minority is independent of average income. Therefore, as specified in Corollary 2, in the face of the alternative offer of P with full redistribution and no identity-based policy, the minimum tax rate at which the minority still prefers the joint offer with R increases in average income. Hence, as the country becomes wealthier, the compromise the minority agrees on becomes more costly for the rich. This implies that the rich make an offer along with the minority to bring about stable democracy that adopts the identity-based policy only *below* a certain income level denoted by $\underline{y}_E^{\overline{\tau}^r_R}$.

Finally, since the willingness of the minority to compromise on redistribution is a function of the direct benefit of identity-based policy $(R - K)$, this benefit should also be large enough so that the willingness of E to compromise (captured by $\frac{R - K}{y(\alpha_R - 1)}$) is sufficient to convince the rich to vote for the joint platform.

To move to the incentives to deviate to a different platform, as in the previous case, first, I will assume that the victory of an alternative offer would lead to inter-group fighting. In that case, P would have incentives to deviate to other points in the policy space if his supporters are better off with inter-group fighting than with the electoral victory of $(\tau^{RE}, 1)$ being accepted by all. Unsurprisingly, a comparison of the payoffs of P from observing the outcome of the elections $(U_P\{(\tau^{RE}, 1); (a, a, a)\})$ and from inter-group fighting $(U_P(f, f, f))$ shows that P does not have incentives to start an inter-group fight only if the elected tax rate is sufficiently high and the country is also sufficiently developed. For P who is left out of the heterogenous coalition, as the country gets poorer and the elected tax rate gets lower, taking the gamble of an inter-group fighting becomes relatively more attractive compared to their payoff from $(\tau^{RE}, 1)$.

When we make the same comparison of payoffs for the minority group, similar to the poor from the majority, we find that minority prefers the election outcome being accepted by all over an inter-group fighting when the tax rate of their joint offer with the rich is sufficiently large. Finally, the rich also prefers the election outcome over an inter-group fighting when the country is sufficiently rich and the tax rate that they offer jointly with the minority is not too high[13].

Hence, we reach the following proposition:

Proposition 9. *There exists a SPE where on the equilibrium path, candidates choose* $\{(\tau^P = 1, r^P = 0), (\tau^{RE}, r^{RE} = 1); (accept, accept, accept)\}$ *and* $(\tau^{RE}, r^{RE} = 1)$ *wins the elections when conditions in Proposition 7 and 8 a) hold,* $y > \underline{\hat{y}}^{fff}$ *and* (f, f, f) *is the equilibrium in post-election subgames of platforms that make the deviator better off.* $\underline{\hat{y}}^{fff}$ *is the maximum of income thresholds above which each group prefers* $(\tau^{RE}, 1)$ *over an inter-group fighting.*

[13] The exact expressions for these threshold values of income and tax rate are in the proof in the Appendix.

Now, I find the conditions under which the victory of an alternative offer would always lead to inter-group fighting and analyze candidates' incentives to deviate. Figure 2 shows how P's deviations can change the winning policy.

First, P can deviate to a tax rate offer along with the identity-based policy that would make both poor groups better off compared to the joint platform of the rich and the minority, if all groups accept that outcome. He would not have this incentive to deviate only if the joint offer is equal to the maximum tax rate (denoted by $\overline{\tau}^r_R$) that the rich tolerates coupled with identity-based policy and if he is not better off with inter-group fighting than $(\tau^{RE}, 1)$ being accepted by all groups.

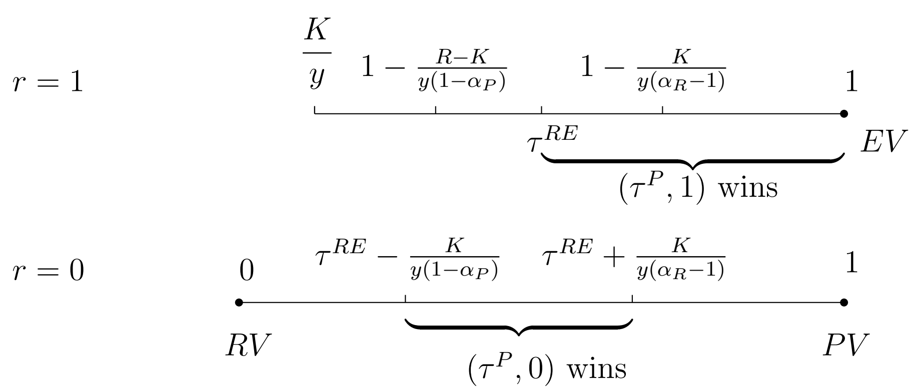


Figure 2. Change in the winning policy when P deviates from (1,0) to (τ^P, r^P) RV, PV, EV denote ideal policies of voters of R, P, and E.

Second, there is always a range of tax rates with no identity-based policy that would make both P and R better off than the joint offer $(\tau^{RE}, 1)$. Supporters of P would vote for $(\tau, 0)$ over $(\tau^{RE}, 1)$ when $\tau > \tau^{RE} - \dfrac{K}{y(1-\alpha_P)}$ while the rich would vote for an offer $(\tau, 0)$ when $\tau < \tau^{RE} + \dfrac{K}{y(\alpha_R - 1)}$. In analogous fashion to the previous case, the only deterrence mechanism that can prevent P from deviating to an offer in this range is the threat of E that they would respond to this move by starting a fight. We know that $\underline{\tau}_E$ decreases in income and P can convince supporters of R to vote for his offer for tax rates higher than the elected τ^{RE}. Hence, E's threat of fighting is credible only if the average income of the country is *below* a certain level and if E derives sufficiently large benefits from the identity-based policy so that the tax rate offered by P is not large enough to convince them not to start a fight. The proposition below highlights these conditions that make this deterrence mechanism credible.

Proposition 10. *If* $\tau^{RE} = \overline{\tau}^r_R$ *and* $U_P\{(\tau^{RE}, 1); (a, a, a)\} \geq U_P(f, f, f)$*, P has no incentives to deviate to* $(\tau^{RE} - \dfrac{K}{y(1-\alpha_P)} < \tau < \tau^{RE} + \dfrac{K}{y(\alpha_R - 1)}, 0)$ *if* $\underline{\tau}_E > \tau^{RE} + \dfrac{K}{y(\alpha_R - 1)}$ *which holds when* $R > hK$ *and* $y < y_R^{\overline{\tau}_E}$*. The expressions for* h *and* $y_R^{\overline{\tau}_E}$ *are in the proof in the appendix.*

To move to E's incentives to deviate, given that $\tau^{RE} = \overline{\tau}^r_R$, there is no point on the policy space, which would make E change the winner, make his group better off compared to τ^{RE} and is also accepted by all groups. The same also holds for R. Hence, neither R nor E have incentives to deviate as long as their payoff from accepting $(\tau^{RE}, 1)$ is larger than their payoff from inter-group fighting. The proposition below concludes this analysis:

Proposition 11. *There exists a SPE where on the equilibrium path candidates choose* $\{(\tau^P = 1, r^P = 0), (\tau^{RE}, r^{RE} = 1); (accept, accept, accept)\}$ *and* $(\tau^{RE}, 1)$ *wins the elections if* $\frac{1}{2}(n_R + n_E) > n_P$*,* $c > \hat{c}^R_E, q_P < \underline{q}'_P$*,* $q_R > \underline{q}_R$*,* $\alpha_P > \underline{\alpha}_P, max\{\hat{\underline{y}}', \hat{\underline{y}}'', \hat{\underline{y}}'''\} < y < min\{\underline{y}_E^{\overline{\tau}^r_R}, y_R^{\overline{\tau}_E}\}$*,* $R > zK$ *and* $\tau^{RE} = \overline{\tau}^r_R$*. The expressions for* $\underline{\alpha}_P, \hat{\underline{y}}', \hat{\underline{y}}'', \hat{\underline{y}}''', z, \underline{y}_E^{\overline{\tau}^r_R}, y_R^{\overline{\tau}_E}$ *are in the proof in the appendix.*

Most of the conditions in the proposition have already been introduced earlier. The additional lower income threshold on income ($\hat{\underline{y}}''$) and market income share of the poor ($\underline{\alpha}_P$) are necessary to ensure that R and E do not find inter-group fighting more attractive than the payoff from $(\tau^{RE}, 1)$. The third lower income threshold $(\underline{\hat{y}}''')$ ensures that the offer $\overline{\tau}^r_R$ falls in the feasible policy space. Finally, the net benefit of identity-based policy for the minority $(R - K)$ is large enough so that both upper income thresholds which are functions of this net benefit, are higher than the lower income thresholds.

Finally, having presented equilibria in which there is democratic stability both in the presence and absence of the identity-based policy, we can also compare some properties of both SPE with and without the identity-based policy. The corollary below presents the comparison of the redistribution rates under both equilibria.

Corollary 3 (Comparison of Redistribution Rates under both Coalitions)**.** *If* (f, f, f) *is the* only *equilibrium in post-election subgames of platforms that make the deviator better off,* $\tau^{RE} = \overline{\tau}^r_R < \tau^{PR} = \overline{\tau}_R$ *and the heterogenous coalition redistributes less than the coalition of the rich and the poor from the majority. If* (f, f, f) *is the equilibrium in post-election subgames that have both* (f, f, f) *and* (a, a, a) *equilibria for platforms that make the deviator better off and* $\dfrac{1 - \alpha_P}{\alpha_R - 1} < 1$*, then there are subgame perfect equilibria where the heterogeneous coalition redistributes more than the homogeneous coalition of the rich and the poor.*

First, this corollary confirms a set of earlier theoretical and empirical findings[14] on a correlation between ethnic divisions and lower redistribution rates, but provides an alternative mechanism to explain this correlation. The coalition of R and E is susceptible to a deviation by E to a tax rate offer along with identity-based policy which is slightly higher than what it offers jointly with R which is τ^{RE}. In that case, E's offer would win since E supporters constitute the largest group. If the joint offer is just equal to the maximum tax rate that R would tolerate along with identity-based policy (which is equal to $\overline{\tau}^r_R$), then any deviation to a higher tax rate would surely lead to an inter-group fighting and if E is worse off in a world where everybody fights each other, E would have no incentives to deviate.

[14]see e.g. Roemer (1998), Alesina, Baqir and Easterly (1999), Austen-Smith and Wallerstein (2006)

The exact same logic also applies to the tax rate that R and P offer (τ^{PR}) jointly. In that case, P could deviate to a slightly higher tax rate and still win the elections by the votes of its supporters. Therefore, if the joint offer of R and P is equal to the maximum tax rate that R would tolerate in the absence of the identity-based policy, which is equal to $\overline{\tau}_R$, then P's deviation would certainly lead to inter-group fighting and P would have no incentives to deviate to a higher tax rate if P does not prefer an inter-group fight over their joint offer with R being accepted by all. This maximum tax rate that R tolerates, is smaller when the identity-based policy is adopted, since this policy causes additional monetary losses to R without any direct benefits. Therefore, the elected tax rate $\tau^{RE} = \overline{\tau}^{r}_{R}$ is smaller than $\tau^{PR} = \overline{\tau}_R$.

However, if deviations to break a coalition lead to inter-group fighting despite the presence of an alternative equilibrium in which all groups accept election results and groups are worse off with an inter-group fighting than with the outcome on the equilibrium path, then other redistribution rates can still sustain the coalitions of the rich with the minority or with the poor from the majority. Therefore, if the tax rates that the rich votes for in a coalition with the minority (whose upper limit is equal to $1 - \frac{K}{y(\alpha_R - 1)}$) is larger than the minimum tax rate above which the poor from the majority supports the joint platform of their candidate with the rich (which is equal to $1 - \frac{K}{y(1 - \alpha_P)}$), there are SPE of the game in which the homogeneous coalition of rich and the poor redistribute *less* than the coalition of the rich and the minority.

As specified in the corollary, this can happen only if the ratio $\frac{1 - \alpha_P}{\alpha_R - 1}$ is small enough which is more likely to hold as both α_P and α_R increase. As it can be easily seen, this is a ratio of how much the poor and the rich care about redistribution. As its market income share increases, the poor from the majority becomes more averse towards the alternative offer of full redistribution and the adoption of identity-based policy by E. Therefore, they are more willing to compromise on redistribution to shun the identity-based policy. Also, as the market income share of the rich increases, their incentives to join the minority in order to beat the alternative offer of full redistribution become stronger. Hence, as α_P and α_R increase, it becomes more likely that the coalition of R and E enact higher tax rates than the coalition of P and R.

5 Economic Welfare and Minority Incentives for Destabilizing Democracy: The Kurdish Insurgency in Turkey

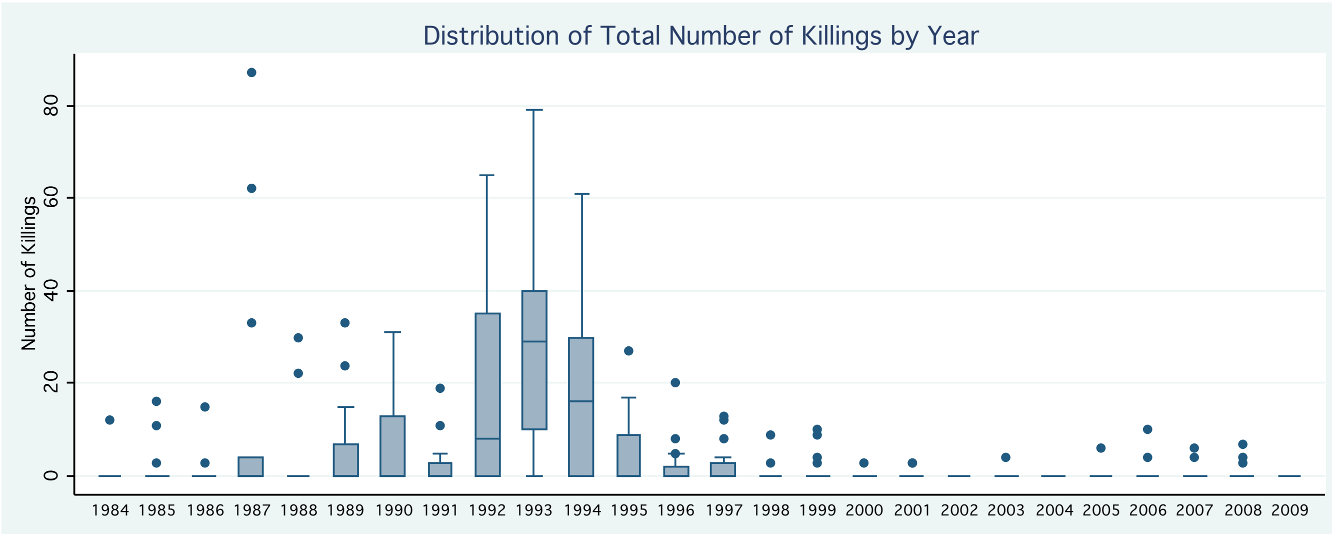
In this section, I present preliminary empirical tests of proposition 3 by using sub-national data from Turkey. Specifically, I test whether in the absence of identity-based policy, conditional on the level of income redistribution, minority groups with *higher* income levels are more likely to destabilize a democratic regime. Although cross-national studies on civil wars have found that GDP per capita makes onsets of civil wars less likely (Fearon and Laitin 2003, Collier and Hoffler 2004), there are reasons to think that higher income of specific groups within a country might have a different impact on levels of violence in civil wars that are already active. This might happen because, as my model illustrates, when redistribution levels are high, an increase in market income will not affect groups' attachment to democracy while it would make future punishments of rebelling groups in the form of low redistribution less effective. In that case, we should expect to observe groups with higher market income engaging in violence more often than groups with lower income.

I test this prediction by focusing on the case of the Kurdish insurgency (Partiya Karkeren Kurdistan (PKK) which means Kurdistan Workers Party in Kurdish) that has been active in the southeastern provinces of Turkey since 1984. I collect province-level data in this region on per capita income, public investment levels and the total number of civilian killings by PKK between 1991 and 2001. In this period, Turkish political elites have preserved their position of not adopting policies that would imply official recognition of the Kurdish language, and the PKK insurgency has been one of the main sources of instability for the Turkish democracy. My empirical analysis of this data shows that in provinces with high levels of public investment, higher levels of per capita GDP in the previous period have *increased* the chances of attacks by PKK in the current year.

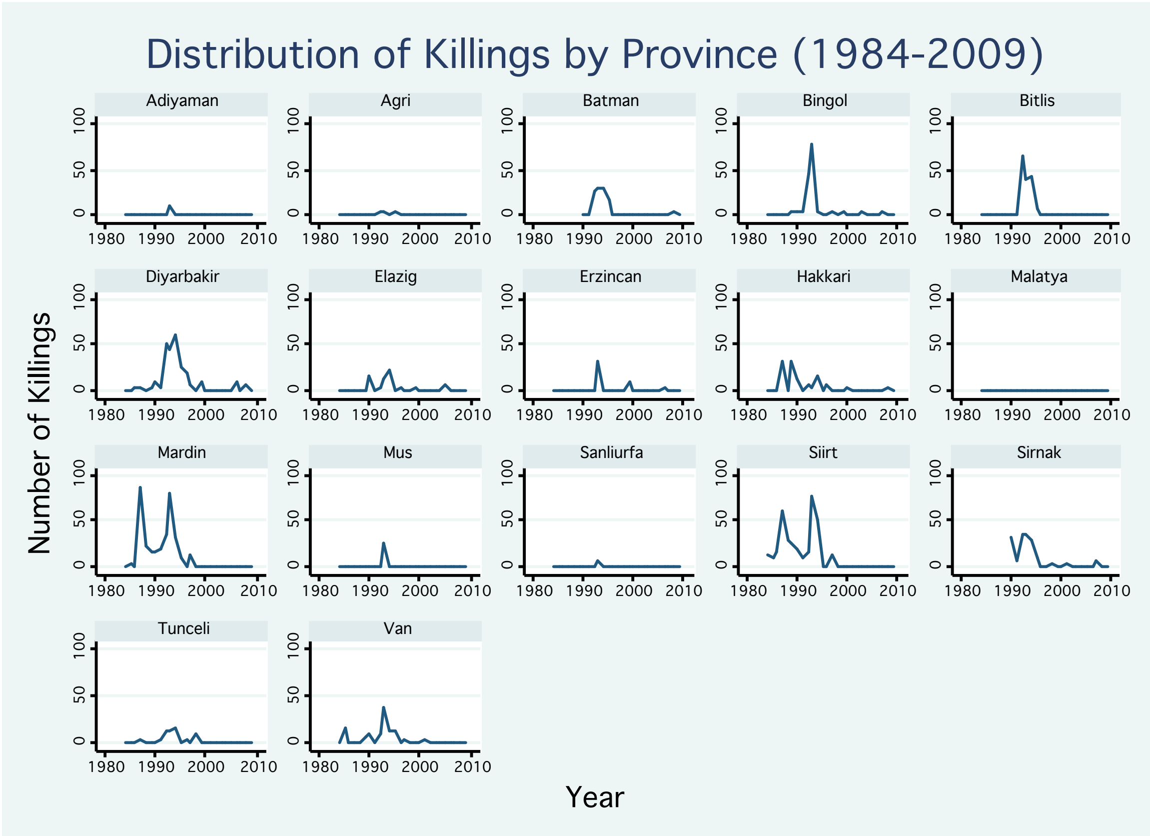
In what follows, first I present the data that I used for the preliminary tests. Then I present the results.

5.1 Data

My dependent variable in this study is based on the number of total civilian killings by PKK in each of the 17 provinces of Turkey where Kurdish-speaking people form more than 20 percent of the total population. It is notoriously difficult to have reliable statistics on the ethnic composition of Turkey since the census in Turkey does not ask about individuals' ethnic identity. The last census in which people were asked their mother tongue has been conducted in 1965. Nevertheless, it is a known fact that the southeastern provinces of Turkey are predominantly Kurdish. Accordingly, in line with the information in several scholarly works (see for instance Gunter 1990), I include the following 17 provinces in the analysis: Adiyaman, Agri, Batman, Bingol, Bitlis, Diyarbakir, Elazig, Erzincan, Hakkari, Malatya, Mardin, Mus, Sanliurfa, Siirt, Sirnak, Tunceli, Van. I calculated the total number of civilian killings for each province-year by recording the total number of civilian killings for each incidence reported in Ozdag (2009) by their province and year, and adding them up on a yearly basis.



The box graph above shows the distribution of civilian killings over the years between 1984 (when the first major attacks in Siirt are conducted) until 2009. As it is clearly visible, the number of killings shows a substantial amount of variation with a significant peak between 1992 and 1996 in which the fighting between the insurgents and the state security forces have become especially brutal. Also, following the capture of PKK leader Abdullah Ocalan in 1999, there has been a marked decrease in the number of killings. It must also be noted that the number of killings varies quite substantially between different provinces in this region. The graph on the next page shows the distribution of killings over the years for each of these 17 provinces separately. Notwithstanding the difficulty of having precise figures on the ethnic composition of these provinces, following Gunter (1990)'s classification, all provinces with higher than 50 killings per year have majority Kurdish populations, with the only exception being Bingol. But as the graph makes clear, even among these provinces, there is a significant variation in the number of killings over time.



My independent variables of interest are measures of economic welfare and redistribution rates in these provinces. I measure these by collecting data on GDP per capita and public investment levels in these provinces. My control variables are high school graduates per 100 people (called "*secondary*"), elevation, population and dummies that measure whether the Kurdish population exceeds 60 percent of the total population in a province (called "*kurd60*") and whether these provinces share a border with another country. Data on GDP per capita, population and high school graduates per 100 people come from Turkish Statistical Institute, data on public investment levels come from State Planning Organization (DPT) and the elevation data come from Turkish State Meteorological Service. The data for GDP per capita cover the period between 1987 and 2001 while the data for public investment levels cover the period between 1991 and 2001. They are both measured in dollars based on the yearly average exchange rate as calculated by the Turkish Statistical Institute. Because of the limitations of the economic data, I focus in my analysis on the incidence of killings between 1991 and 2001. As the distribution of killings by years makes abundantly clear, this period covers the years with the most intense periods of fighting between the insurgents and the Turkish state security forces.

6 Analysis

As a first cut at analyzing this data-set, I estimate the following model:

$$
\begin{aligned}
P(fight = 1|X) = & G(\beta_1 GDP(cap)_{t-1} + \beta_2 investment_{t-1} + \beta_3 GDP(cap)_{t-1} * investment_{t-1} \\
& + \beta_4 secondary_{t-1} + \beta_5 population_{t-1} + \beta_6 elevation + \beta_7 border + \beta_8 kurd60 + \epsilon)
\end{aligned}
$$

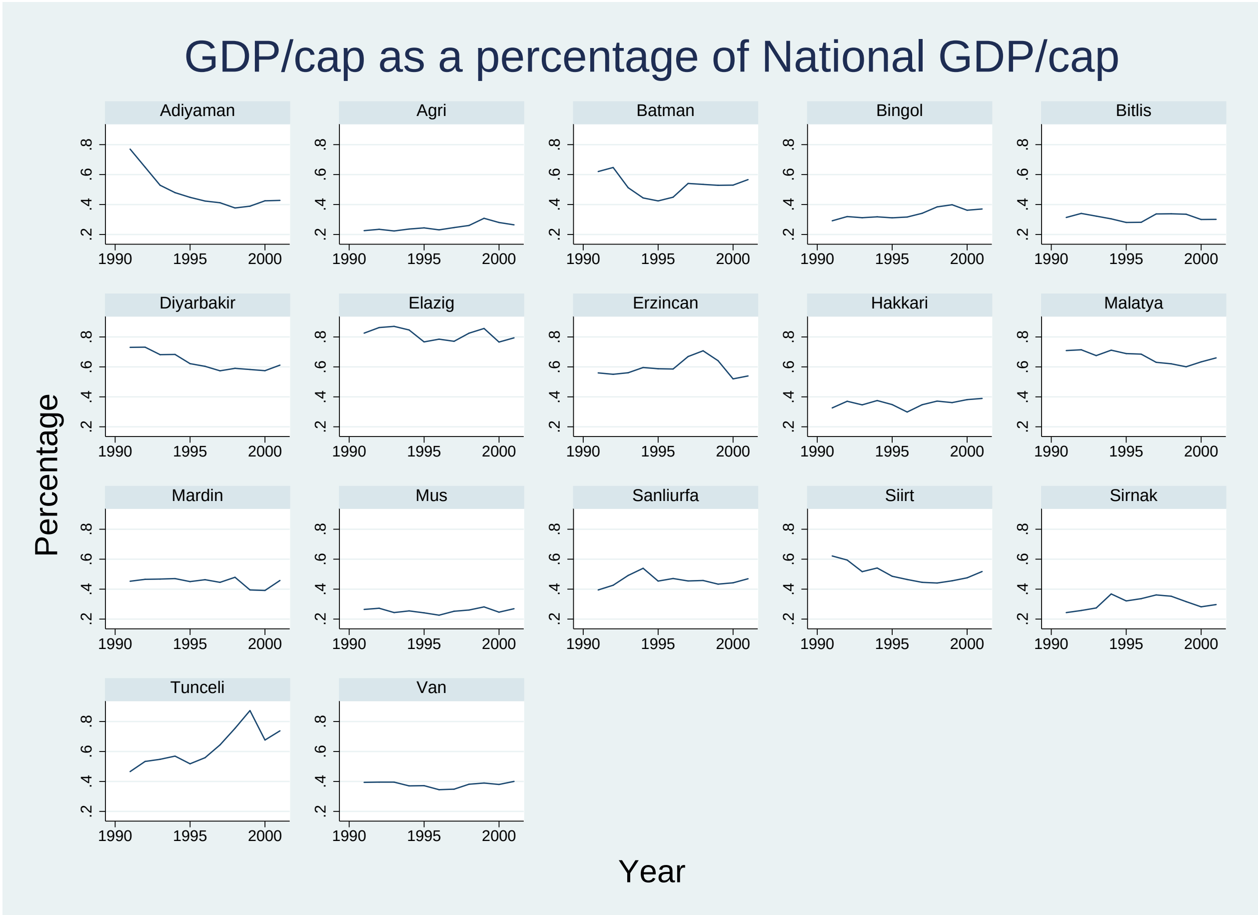
I am interested in the impact of higher market income conditional on levels of redistribution. In order to test whether market income has a conditional effect, I include an interaction term between $GDP(cap)$ and $investment$ in the model. I use logs of $GDP(cap)$, $investment$, $population$ and $elevation$. I code the variable $fight$ as equal to 1 if there is a positive number of killings in a province in a particular year, and zero otherwise. I also code this variable with alternative thresholds of yearly killings of 5, 10, 15, 20 and 25 to see if large-scale killings exhibit different patterns than small-scale violence committed by the insurgency. Below are the descriptive statistics for all the variables included in the model. As it can be seen from Table 1, almost 25 percent of all province-years in my sample have a positive number of civilian killings. Also, more than 10 percent of all province-years have had 15 or more killings.

It must be also noted that these provinces constitute some of the poorest regions of

Table 1: Summary statistics

Variable	Mean	Std. Dev.	Min.	Max.	N
fight	0.249	0.433	0	1	430
fight5	0.184	0.388	0	1	430
fight10	0.14	0.347	0	1	430
fight15	0.102	0.303	0	1	430
fight20	0.077	0.266	0	1	430
fight25	0.067	0.251	0	1	430
GDP(cap)	1182.737	500.251	316	2621	247
investment	16.577	1.042	14.536	19.312	186
secondary	4.449	2.568	2.135	17.243	249
population	478007.434	276309.196	93584	1443422	249
elevation	1123.716	374.8	547	1728	430
border	0.349	0.477	0	1	430
kurd60	0.577	0.495	0	1	430

Turkey. As shown in the figure below, for all province-years in the sample, the ratio of GDP per capita values in these provinces to the country average is less than one. This fact has led many to think that the insurgency in the region is mainly motivated by economic deprivation, and efforts aimed at the economic development of the region would be sufficient to defeat it. This approach has motivated the ongoing "Southeastern Anatolia Project (GAP)" in the region which has been initially conceived in 1980 and has become a multi-sector development program in 1989 that includes projects in agriculture, rural and urban infrastructure, hydraulic energy, irrigation, forestry, education and health. One of the declared goals of this project has been to decrease the economic disparity between this region and the rest of Turkey and thereby to contribute to social stability (see the description of the history of the project at www.gap.gov.tr). Here, I present evidence that high levels of public investment may make instability more likely in the absence of policies that also address the identity-based demands of the residents of the region.



The tables 2 and 3 present the results for the alternative thresholds of killings each year. Apart from the effect of the covariates included in the model, previous incidences of fighting in a province would also have an effect on the probability of fighting in the current year. Hence, observations are dependent on the length of peaceful years preceding them. Therefore, in each specification, to control for this 'duration dependence', I also include a peace-years count for each province and three natural cubic splines[15].

A set of clear patterns emerges from the analysis. First, for yearly killings less than 15, when the interaction term is not included, GDP per capita in the previous year is positive and statistically significant. However, when I add the interaction term, GDP per capita fails

[15]see Beck, Katz, Tucker (1998)

Table 2: Per Capita GDP and Likelihood of Attacks (less than 15 killings per year)

	(1)	(2)	(3)	(4)	(5)	(6)
	fight	fight	fight5	fight5	fight10	fight10
GDP(cap)(log)	1.020**	-2.922	1.498***	-4.553	1.978***	-6.702
	(0.455)	(5.883)	(0.437)	(6.382)	(0.571)	(7.165)
investment(log)	0.069	-1.636	0.018	-2.610	-0.004	-3.822
	(0.144)	(2.582)	(0.164)	(2.745)	(0.183)	(3.078)
GDP(cap)*investment		0.239		0.366		0.530
		(0.364)		(0.384)		(0.426)
secondary	-0.160***	-0.171**	-0.215***	-0.239***	-0.219***	-0.258***
	(0.060)	(0.067)	(0.076)	(0.084)	(0.081)	(0.098)
population(log)	-0.353*	-0.382**	-0.383	-0.408*	-0.441	-0.490
	(0.198)	(0.194)	(0.238)	(0.244)	(0.361)	(0.359)
elevation(log)	0.454	0.435	0.385	0.340	0.500	0.397
	(0.341)	(0.343)	(0.336)	(0.367)	(0.390)	(0.419)
border	0.069	0.082	-0.113	-0.092	-0.100	-0.032
	(0.214)	(0.210)	(0.225)	(0.221)	(0.246)	(0.241)
kurd60	0.433	0.371	0.470	0.352	0.735	0.538
	(0.347)	(0.352)	(0.353)	(0.377)	(0.459)	(0.536)
peaceful years	-0.331**	-0.322*	-0.656**	-0.664**	-0.628***	-0.678***
	(0.162)	(0.164)	(0.292)	(0.283)	(0.176)	(0.159)
Observations	186	186	186	186	186	186

Province-clustered standard errors in parentheses. Estimates of the three natural cubic splines not shown.

to be significant and also changes sign. In models with multiplicative interaction terms, it is possible that the marginal effect of a variable is significant even though the individual coefficient estimates are insignificant (Brambor et al (2005)). Moreover, from the estimates of the model, we can only make inferences about the effect of a change in GDP per capita when investment levels are equal to zero which never occurs in the data set. For these reasons, in addition to the estimates of the model parameters, I also estimated the marginal effect of a one-standard deviation increase in GDP per capita (log) from its mean on the chances of an attack, when investment levels change from their minimum to their maximum values in the sample and the rest of the covariates are set at their means.[16] For definitions of *fight* with less than 15 killings per year, the estimated impact is statistically indistinguishable from zero. Hence, for small numbers of yearly killings, there is no clear evidence to support my hypothesis that when investment levels are high, an increase in GDP per capita increases the chances of attacks in a province.

Another robust finding in this analysis is that for all thresholds of yearly killings below 15, the number of high school graduates per 100 people (the variable *secondary*) has a negative and significant effect on the likelihood of attacks. In the literature on the causes of civil wars (Sambanis 2004, Collier and Hoeffler 2004), educational attainment is considered to be a measure of the opportunity cost of rebellion. The fact that the number of high-school graduates per 100 people has a negative and statistically significant impact on the likelihood of attacks for all models with and without the interaction term provides strong support to the opportunity cost argument in the case of the Kurdish insurgency in Turkey.

When we move to the results with yearly killings of 15 or more in Table 3, as in the case with killings less than 15, GDP per capita in the previous year is positive and statistically significant when the interaction term is not included, but with the interaction term, it loses

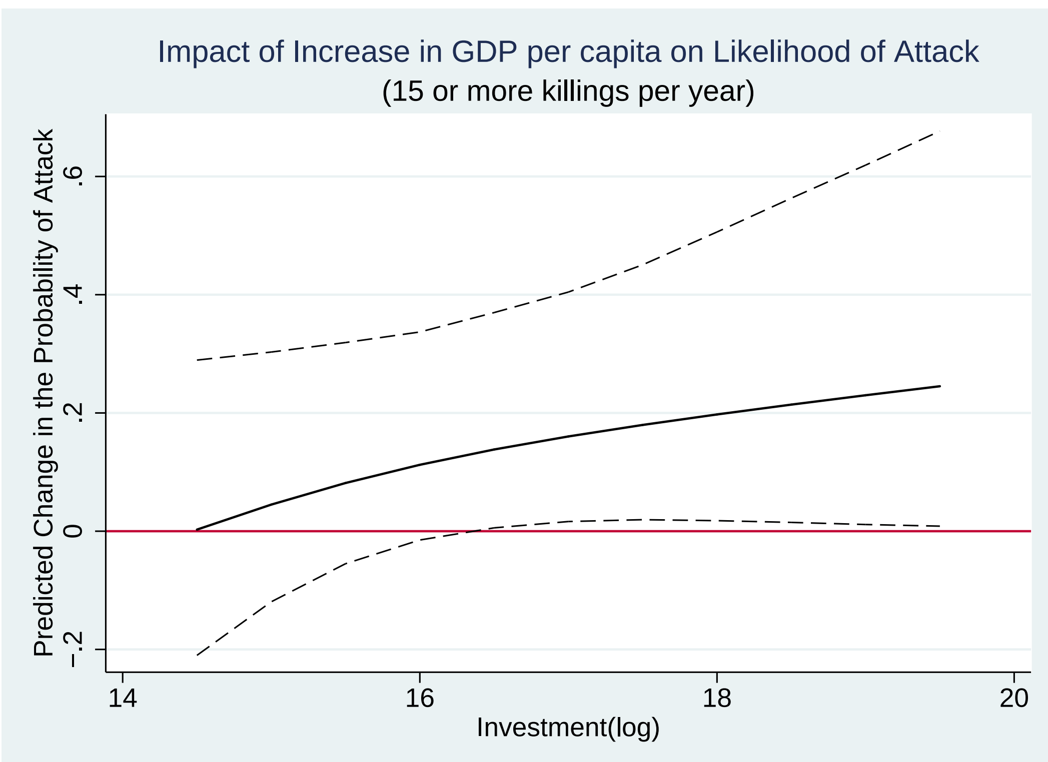
[16]These estimates are calculated by using the method used in Golder (2006), which is presented in Brambor et al. (2005) for illustrative purposes.

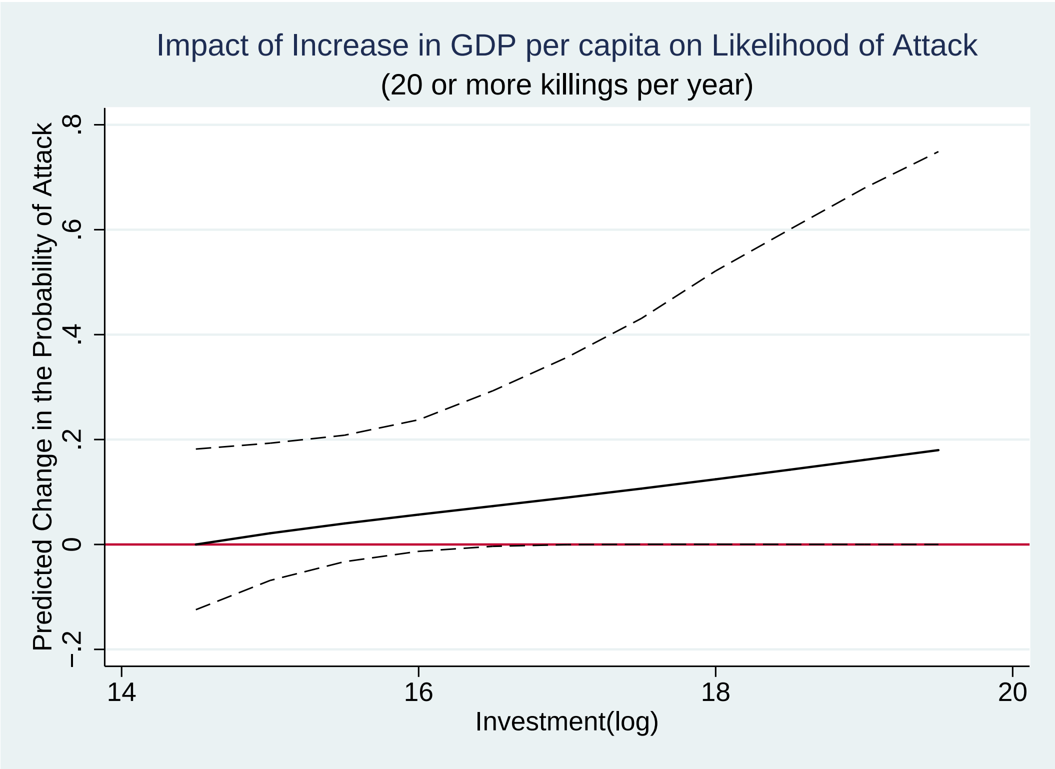
Table 3: Per Capita GDP and Likelihood of Attacks(15 or more killings per year)

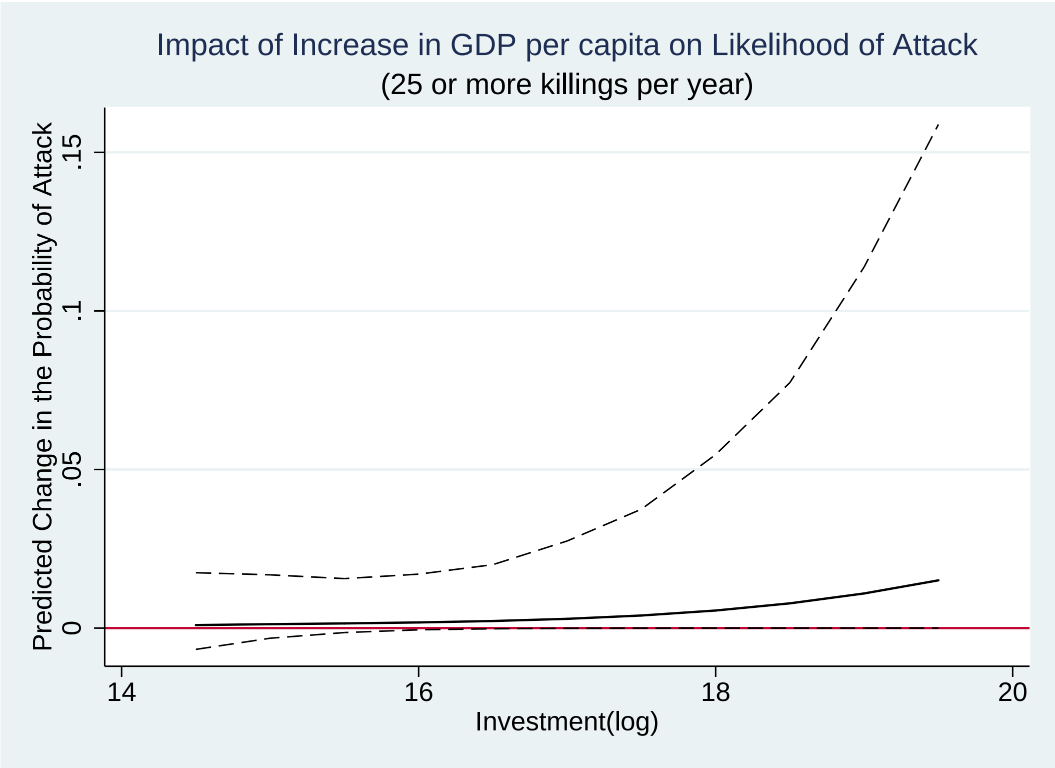
	(1)	(2)	(3)	(4)	(5)	(6)
	fight15	fight15	fight20	fight20	fight25	fight25
GDP(cap)(log)	2.290***	-6.153	1.361*	-4.072	1.247*	-3.939
	(0.812)	(8.758)	(0.753)	(9.375)	(0.757)	(8.363)
investment(log)	0.032	-3.695	-0.137	-2.552	-0.133	-2.421
	(0.219)	(3.779)	(0.224)	(4.051)	(0.236)	(3.591)
GDP(cap)*investment		0.517		0.337		0.321
		(0.512)		(0.566)		(0.505)
secondary	-0.298**	-0.340**	-0.303*	-0.341*	-0.338**	-0.370*
	(0.123)	(0.134)	(0.178)	(0.207)	(0.169)	(0.198)
population(log)	-0.615	-0.673*	0.069	-0.009	-0.034	-0.105
	(0.390)	(0.366)	(0.481)	(0.532)	(0.504)	(0.547)
elevation(log)	0.791	0.701	0.307	0.295	0.139	0.118
	(0.538)	(0.575)	(0.504)	(0.477)	(0.514)	(0.488)
border	-0.297	-0.259	-0.450	-0.403	-0.333	-0.292
	(0.260)	(0.267)	(0.369)	(0.384)	(0.335)	(0.346)
kurd60	1.020	0.840	0.611	0.481	0.524	0.406
	(0.673)	(0.801)	(0.667)	(0.758)	(0.668)	(0.722)
peaceful years	-1.007***	-1.038***	-0.773***	-0.766***	-0.766***	-0.759***
	(0.232)	(0.225)	(0.217)	(0.217)	(0.172)	(0.170)
Observations	186	186	186	186	186	186

Province-clustered standard errors in parentheses. Estimates of the three natural cubic splines not shown.

significance and changes sign. I also estimated the marginal effect of a one-standard deviation increase in GDP per capita (log) from its mean on the chances of an attack, when investment levels change from their minimum to their maximum values in the sample and the rest of the covariates are set at their means for the yearly killings of 15 or more. As the graphs make clear, for the yearly killings of 15 or more, there is evidence that supports my theoretical result: A one-standard deviation increase in GDP per capita (log) from its mean has a positive and significant effect on the chances of attacks when investment levels are also high. This effect is especially pronounced when fighting is defined as the number of yearly killings being 15 or more. The estimated effect is around 20 percent. The effect persists when the threshold is set at 20 yearly killings while it becomes much lower and imprecise when the threshold is raised to 25.




Impact of Increase in GDP per capita on Likelihood of Attack
(20 or more killings per year)
Predicted Change in the Probability of Attack
−.2
0
.2
.4
.6
.8
14
16
18
20
Investment(log)


Impact of Increase in GDP per capita on Likelihood of Attack
(25 or more killings per year)
Predicted Change in the Probability of Attack
0
.05
.1
.15
14
16
18
20
Investment(log)

7 Conclusion

This paper presented a model of electoral competition to highlight causal mechanisms that help us to understand the conditions under which the presence (or absence) of policies that distinguish among groups on the basis of their ascriptive traits such as language, religion and race leads to democratic stability. The model is based on two premises: First, in societies where differences of ascriptive traits are politicized, leaders' incentives to moderate their demands and their loyalty to the democratic regime should not be assumed to exist. Second, in democracies that are not wealthy, the issue of income redistribution is likely to create class conflict among members of the majority who share the same ascriptive traits, and open up the possibility for coalitions between groups who differ in these traits.

On the basis of these two premises, the model shows that democracies that are not sufficiently wealthy, remain stable and they do not deviate from the status quo on the dimension of identity-based policy since a deviation leads to a violent response from the group that benefits from the status quo. The empirical implication of this result is that in democracies with intermediate levels of income, we would observe stability with and without the identity-based policy but no alternation between these two positions. In poor democracies, we would observe alternations followed by instability and fighting while in wealthy democracies changes on the decision about the identity-based policy would happen without any interruption of the democratic process.

Second, focusing on the incentives of a poor minority group to initiate a fight in the face of undesirable policy choices in a democracy, I showed that these incentives may be stronger if the minority group has a higher level of economic well-being independent of state-enforced redistribution. Moreover, these incentives become dominant when redistribution rates towards the minority are also high. The reason for this result is that, if one of the possible consequences of resorting to violence is a regime in which there is very limited redistribution, then the minority has less to fear from this possibility as its level of well-being improves. In addition, even though a more prosperous minority would also lose more from subverting democracy, highly redistributive democracies limit this inhibiting factor by reducing the differences of material well-being between groups with different levels of income. The empirical implication of this causal mechanism is that democracies may be more likely to suffer from rebellions as the disgruntled minority groups improve their material conditions in a state that is also committed to high levels of redistribution. I presented evidence from the Kurdish insurgency in Turkey that confirms this prediction: In provinces with high levels of public investment, higher levels of per capita GDP in the previous period have *increased* the chances of insurgents' attacks on the civilians in the current year.

Third, the model also highlights the possibility that depending on what would happen if a coalition partner deviates from a joint platform and which alternative platforms compete in elections, coalitions between groups with different ascriptive traits may redistribute more than coalitions between groups with the same traits. More specifically, if candidates of a heterogeneous coalition compete against an alternative that calls for higher redistribution coupled with no identity-based policy and deviation from a joint platform leads to inter-group fighting, when this heterogeneous coalition wins the elections, it may redistribute more than the homogeneous coalition.

8 Appendix

Proof (Lemma 1): I denote the actions 'accept' and 'fight' by the letters 'a' and 'f'.

I start with the incentives of P. We know that $U_P(f, f, f) = q_P y(1-c) + q_R \alpha_P y(1-c) + q_E(y(1-c) - K)$ and $U_P(a, f, f) = q_P[U_P(\tau^{dem}, r^{dem}|fight)] + q_R \alpha_P y(1-c) + q_E[y(1-c) - K]$ where $U_P(\tau^{dem}, r^{dem}|fight)$ denotes P's utility from winning the fight against R and E to maintain the elected platform which happens with probability q_P. We also know that $U_P(\tau^{dem}, r^{dem}|fight)] \leq y(1-c)$ since $U_P(\tau^{dem}, r^{dem} = 0|fight)] = (1 - \tau^{dem})\alpha_P y(1-c) + \tau^{dem} y(1-c)$ and $U_P(\tau^{dem}, r^{dem} = 1|fight)] = (1 - \tau^{dem})\alpha_P y(1-c) + \tau^{dem} y(1-c) - K$ both of which are increasing in τ^{dem} and hence reach their max which is equal to $y(1-c)$ when $\tau^{dem} = 1$. Therefore, $U_P(f, f, f) \geq U_P(a, f, f)\ \forall\ (\tau, r)$ and $U_P(f, f, f) = U_P(a, f, f)$ if and only if $(\tau^{dem} = 1, r^{dem} = 0)$. The same reasoning applies to R and E as well such that $U_R(f, f, f) \geq U_R(f, a, f)\ \forall\ (\tau, r)$ and $U_R(f, f, f) = U_R(f, a, f)$ if and only if $(\tau^{dem} = 0, r^{dem} = 0)$ and $U_E(f, f, f) \geq U_E(f, f, a)\ \forall\ (\tau, r)$ and $U_E(f, f, f) = U_E(f, f, a)$ if and only if $(\tau^{dem} = 1, r^{dem} = 1)$. Therefore, (f, f, f) is an equilibrium in all possible sub-games following the elections.

We know that for each group i, $U_i((\tau^{dem}, r^{dem})|fight) < U_i((\hat{\tau}_i, \hat{r}_i)|fight)$ if $(\tau^{dem}, r^{dem}) \neq (\hat{\tau}_i, \hat{r}_i)$ and $U_i((\tau^{dem}, r^{dem})|fight) = U_i((\hat{\tau}_i, \hat{r}_i)|fight)$ if $(\tau^{dem}, r^{dem}) = (\hat{\tau}_i, \hat{r}_i)$. Hence, it must be true that either $U_i(a^i = f, a^j = a, a^k = f) > U_i(a^i = a, a^j = a, a_k = f)$ or $U_j(a^i = a, a^j = f, a^k = f) > U_i(a^i = a, a^j = a, a_k = f)$ since (τ^{dem}, r^{dem}) can not be equal to both $(\hat{\tau}_i, \hat{r}_i)$ and $(\hat{\tau}_j, \hat{r}_j)$. Therefore, there is no (τ^{dem}, r^{dem}) for which $U_i(a^i = a, a^j = a, a^k = f) > U_i(a^i = f, a^j = a, a^k = f)$ and $U_j(a^i = a, a^j = a, a^k = f) > U_i(a^i = a, a^j = f, a_k = f)$ which means that there is no platform after the electoral victory of which there is an equilibrium where $(a^i = a, a^j = a, a_k = f)$.

□

Proof (Lemma 2): P accepts $(\tau^{dem}, 0)$ when R and E accept it if $U_P(\tau^{dem}, 0) = (1 - \tau^{dem})\alpha_P y + \tau^{dem} y \geq U_P((\tau^{dem}, 0); (f, a, a)) = q_P y(1-c) + (1-q_P)[(1-\tau^{dem})(1-c)\alpha_P y + \tau^{dem} y(1-c)]$ which is equivalent to $\tau^{dem} \geq 1 - \dfrac{c}{(1-\alpha_P)(c + q_P(1-c))} = \underline{\tau}_P$ where $\underline{\tau}_P \leq 0$ if $q_P \leq \dfrac{c\alpha_P}{(1-c)(1-\alpha_P)} = \underline{q}_P$. R accepts $(\tau^{dem}, 0)$ when P and E accept it if $U_R(\tau^{dem}, 0) = (1-\tau^{dem})\alpha_R y + \tau^{dem} y \geq U_R((\tau^{dem}, 0); (a, f, a)) = q_R \alpha_R y(1-c) + (1-q_R)[(1-\tau^{dem})(1-c)\alpha_R y + \tau^{dem} y(1-c)]$ which is equivalent to $\tau^{dem} \leq \dfrac{c\alpha_R}{(\alpha_R - 1)(c + q_R(1-c))} = \overline{\tau}_R$ where $\overline{\tau}_R \geq 1$ if $q_R \leq \dfrac{c}{(1-c)(\alpha_R - 1)} = \underline{q}_R$.

E accepts $(\tau^{dem}, 0)$ when P and R accept it if $U_E((\tau^{dem}, 0)) = (1-\tau^{dem})\alpha_P y + \tau^{dem} y \geq U_E((\tau^{dem}, 0); (a, a, f)) = q_E[y(1-c) - K + R] + (1-q_E)[(1-\tau^{dem})(1-c)\alpha_P y + \tau^{dem} y(1-c)]$ which is equivalent to $\tau^{dem} \geq 1 + \dfrac{q_E(R-K) - cy}{y(1-\alpha_P)(c + q_E(1-c))} = \underline{\tau}_E$. Note that $\dfrac{d\underline{\tau}_E}{dy} < 0$, and $\underline{\tau}_E \leq 1$ only if $y \geq \dfrac{1}{c}[q_E(R-K)] = \underline{y}_E$; and if $q_E < \dfrac{c\alpha_P}{(1-c)(1-\alpha_P)} = \underline{q}_E$, $\underline{\tau}_E \leq 0$ when $y \geq \dfrac{q_E(R-K)}{c\alpha_P + q_E(1-c)(\alpha_P - 1)} = \overline{y}_E$; and it is easy to verify that $\overline{y}_E > \underline{y}_E$.

Hence, there are twelve cases in which the winning policy of $(\tau^{dem}, 0)$ would be accepted by all groups. The cases differ among themselves in terms of which groups have binding constraints on the tax rate:

If $q_E < \underline{q}_E$; 1) $q_P \leq \underline{q}_P, q_R \leq \underline{q}_R, y \geq \overline{y}_E$; 2) $q_P > \underline{q}_P, q_R \leq \underline{q}_R, y \geq \overline{y}_E$ and $\tau^{dem} \geq \underline{\tau}_P$; 3) $q_P \leq \underline{q}_P, q_R > \underline{q}_R, y \geq \overline{y}_E$ and $\tau^{dem} \leq \overline{\tau}_R$; 4) $q_P \leq \underline{q}_P, q_R \leq \underline{q}_R, \underline{y}_E \leq y < \overline{y}_E$ and $\tau^{dem} \geq \underline{\tau}_E$; 5) $q_P > \underline{q}_P, q_R \leq \underline{q}_R, \underline{y}_E \leq y < \overline{y}_E$ and $\tau^{dem} \geq max\{\underline{\tau}_P, \underline{\tau}_E\}$; 6) $q_P \leq \underline{q}_P, q_R > \underline{q}_R$, $\underline{y}_E^R = \dfrac{q_E(R-K)(\alpha_R - 1)(c + q_R(1-c))}{(\alpha_R - 1)(c + q_R(1-c))(c - (1-\alpha_P)(c + q_E(1-c))) + c\alpha_R(1-\alpha_P)(c + q_E(1-c))} \leq y < \overline{y}_E$ and $\underline{\tau}_E \leq \tau^{dem} \leq \overline{\tau}_R$ where $\underline{\tau}_E = \overline{\tau}_R$ when $y = \underline{y}_E^R$. 7) $q_P > \underline{q}_P, q_R > \underline{q}_R, y \geq \overline{y}_E$; $c \geq \underline{c}_P^R = \frac{\sqrt{[2q_P q_R(1-\alpha_P)(\alpha_R - 1) + q_P(1-\alpha_P)]^2 + 4[(\alpha_R - 1)(1 - q_P q_R(1-\alpha_P)) + (1-\alpha_P)(1-q_P) + q_R\alpha_P][(\alpha_R - 1)(1-\alpha_P)q_P q_R}}{2[(\alpha_R - 1)(1 - q_P q_R(1-\alpha_P)) + (1-\alpha_P)(1-q_P) + q_R\alpha_P]}$ - $\frac{2q_P q_R(1-\alpha_P)(\alpha_R - 1) + q_P(1-\alpha_P) + \alpha_P\alpha_R - \alpha_P q_R}{2[(\alpha_R - 1)(1 - q_P q_R(1-\alpha_P)) + (1-\alpha_P)(1-q_P) + q_R\alpha_P]}$, and $\underline{\tau}_P \leq \tau^{dem} \leq \overline{\tau}_R$ where this inequality holds if $c \geq \underline{c}_P^R$; 8) $q_P > \underline{q}_P, q_R > \underline{q}_R, \underline{y}_E^R \leq y < \overline{y}_E$, and $c \geq \underline{c}_P^R$ and $max\{\underline{\tau}_P, \underline{\tau}_E\} \leq \tau^{dem} \leq \overline{\tau}_R$; and if $q_E \geq \underline{q}_E$, 9) $q_P \leq \underline{q}_P, q_R \leq \underline{q}_R, y \geq \underline{y}_E$ and $\tau^{dem} \geq \underline{\tau}_E$; 10) $q_P > \underline{q}_P, q_R \leq \underline{q}_R, y \geq \underline{y}_E$ and $\tau^{dem} \geq max\{\underline{\tau}_P, \underline{\tau}_E\}$; 11) $q_P \leq \underline{q}_P, q_R > \underline{q}_R, y \geq \underline{y}_E^R$, $c \geq \underline{c}_E^R =$

$\frac{\sqrt{[2q_Eq_R(1-\alpha_P)(\alpha_R-1)+q_E(1-\alpha_P)]^2+4[(\alpha_R-1)(1-q_Eq_R(1-\alpha_P))+(1-\alpha_P)(1-q_E)+q_R\alpha_P][(\alpha_R-1)(1-\alpha_P)q_Eq_R}}{2[(\alpha_R-1)(1-q_Eq_R(1-\alpha_P))+(1-\alpha_P)(1-q_E)+q_R\alpha_P]}$ - $\frac{2q_Eq_R(1-\alpha_P)(\alpha_R-1)+q_E(1-\alpha_P)+\alpha_P\alpha_R-\alpha_Pq_R}{2[(\alpha_R-1)(1-q_Eq_R(1-\alpha_P))+(1-\alpha_P)(1-q_E)+q_R\alpha_P]}$, and $\underline{\tau}_E \leq \tau^{dem} \leq \overline{\tau}_R$. $\underline{\tau}_E \leq \overline{\tau}_R$ when $y \geq \underline{y}_E^R > 0$ if $c \geq \underline{c}_E^R$. If $c < \underline{c}_E^R$, $\underline{\tau}_E \leq \overline{\tau}_R$ when $y \leq \underline{y}_E^R < 0$ which obviously never holds; and 12) $q_P > \underline{q}_P, q_R > \underline{q}_R, y \geq \underline{y}_E^R$, $c \geq \underline{c} = max\{\underline{c}_P^R, \underline{c}_E^R\}$, and $max\{\underline{\tau}_P, \underline{\tau}_E\} < \tau^{dem} \leq \overline{\tau}_R$.

Then it is easy to see that when $y \geq \underline{y}_E^R$, $c \geq \underline{c} = max\{\underline{c}_P^R, \underline{c}_E^R\}$, and $max\{\underline{\tau}_P, \underline{\tau}_E\} < \tau^{dem} \leq \overline{\tau}_R$, all groups accept the election of $(\tau^{dem}, r^{dem} = 0)$.

P accepts $(\tau^{dem}, 1)$ when R and E accept it if $U_P(\tau^{dem}, 1) = (1-\tau^{dem})\alpha_P y + \tau^{dem} y - K \geq U_P((\tau^{dem}, 1); (f, a, a)) = q_P y(1-c) + (1-q_P)[(1-\tau^{dem})(1-c)\alpha_P y + \tau^{dem} y(1-c) - K]$ which is equivalent to $\tau^{dem} \geq 1 - \dfrac{cy - q_P K}{y(1-\alpha_P)(c + q_P(1-c))} = \underline{\tau}_P^r$ where the subscript denotes the identity of the group and the superscript r denotes that this is the tax constraint when the policy of identity-based policy is implemented. R accepts $(\tau^{dem}, 1)$ when P and E accept it if $U_R(\tau^{dem}, 1) = (1-\tau^{dem})\alpha_R y + \tau^{dem} y - K \geq U_R((\tau^{dem}, 1); (a, f, a)) = q_R\alpha_R y(1-c) + (1-q_R)[(1-\tau^{dem})(1-c)\alpha_R y + \tau^{dem} y(1-c) - K]$ which is equivalent to $\tau^{dem} \leq \dfrac{c\alpha_R y - q_R K}{y(\alpha_R - 1)(c + q_R(1-c))} = \overline{\tau}_R^r$. E accepts $(\tau^{dem}, 1)$ when P and R accept it if $U_E((\tau^{dem}, 1); (a, a, a)) = (1-\tau^{dem})\alpha_P y + \tau^{dem} y - K + R \geq U_E((\tau^{dem}, 1); (a, a, f)) = q_E[y(1-c) - K + R] + (1-q_E)[(1-\tau^{dem})(1-c)\alpha_P y + \tau^{dem} y(1-c) - K + R]$ which is equivalent to $\tau^{dem} \geq \dfrac{q_E(1-c)}{c + q_E(1-c)} = \underline{\tau}_E^r$.

For a platform $(\tau^{RE}, 1)$ to be accepted by all groups, it must be the case that $max\{\underline{\tau}_P^r, \underline{\tau}_E^r\} \leq \overline{\tau}_R^r$. To find out the cases in which this inequality holds, first note that $\underline{\tau}_P^r \geq 1$ if $y \leq \dfrac{1}{c} q_P K = \underline{y}_P$ and $\overline{\tau}_R^r \leq 0$ if $y \leq \dfrac{1}{c\alpha_R} q_R K = \underline{y}_R$. Hence $(\tau^{RE}, 1)$ is accepted only if $y \geq max\{\underline{y}_P, \underline{y}_R\}$. Second, note that $\dfrac{d\underline{\tau}_E^r}{dy} = 0$, $\dfrac{d\underline{\tau}_P^r}{dy} < 0$ and

$$\lim_{y \to +\infty} \underline{\tau}_P^r = 1 - \frac{c}{(1-\alpha_P)(c + q_P(1-c))}$$

Also, $\dfrac{d\overline{\tau}_R^r}{dy} > 0$ and

$$\lim_{y\to+\infty} \overline{\tau}_R^r = \frac{c\alpha_R}{(\alpha_R-1)(c+q_R(1-c))}$$

.

So, $\underline{\tau}_P^r > \underline{\tau}_E^r\ \forall\, y$ if $\forall\, y$, $1-\dfrac{c}{(1-\alpha_P)(c+q_P(1-c))} \geq \dfrac{q_E(1-c)}{c+q_E(1-c))}$ which holds only if $q_P > q_E$ and $\alpha_P \leq \dfrac{(1-c)(q_P-q_E)}{c+q_P(1-c)} = \hat{\alpha}_P$. Otherwise, there is a $y = y_P^E$ such that $\underline{\tau}_P^r > \underline{\tau}_E^r$ if $y < y_P^E$, $\underline{\tau}_P^r = \underline{\tau}_E^r$ if $y = y_P^E$, and $\underline{\tau}_P^r < \underline{\tau}_E^r$ if $y > y_P^E$. The superscript and the subscript denote the identity of the group whose tax constraint is larger and smaller, respectively.

Second, note that $\overline{\tau}_R^r < \underline{\tau}_P^r\ \forall\, y$ if $1-\dfrac{c}{(1-\alpha_P)(c+q_P(1-c))} > \dfrac{c\alpha_R}{(\alpha_R-1)(c+q_R(1-c))}$ which holds when $q_P \geq \dfrac{c[c(\alpha_R-\alpha_P)+q_R(1-c)\alpha_P(\alpha_R-1)]}{(1-c)(1-\alpha_P)[(\alpha_R-1)q_R(1-c)-c]} = \underline{q}_P'$ and $q_R > \dfrac{c}{(\alpha_R-1)(1-c)} = \underline{q}_R$. Otherwise, there is a $y = y_P^R$ such that $\underline{\tau}_P^r > \overline{\tau}_R^r$ if $y < y_P^R$, $\underline{\tau}_P^r = \overline{\tau}_R^r$ if $y = y_P^R$, and $\underline{\tau}_P^r < \overline{\tau}_R^r$ if $y > y_P^R$. $\overline{\tau}_R^r = \underline{\tau}_P^r$ if $1-\dfrac{cy_P^R-q_PK}{y_P^R(1-\alpha_P)(c+q_P(1-c))} = \dfrac{q_RK-c\alpha_Ry_P^R}{y_P^R(1-\alpha_R)(c+q_R(1-c))}$, which after some tedious algebra becomes $y_P^R = \frac{K[q_P(\alpha_R-1)(c+q_R(1-c))+q_R(1-\alpha_p)(c+q_P(1-c))]}{q_Pq_R(1-c)^2(1-\alpha_P)(1-\alpha_R)+q_Pc(1-c)(1-\alpha_P)+c[c(\alpha_R-\alpha_P)+q_R(1-c)\alpha_P(\alpha_R-1)]}$ which is positive if $q_R \leq \dfrac{c}{(\alpha_R-1)(1-c)}$, or $q_R > \dfrac{c}{(\alpha_R-1)(1-c)}$ and $q_P < \dfrac{c[c(\alpha_R-\alpha_P)+q_R(1-c)\alpha_P(\alpha_R-1)]}{(1-c)(1-\alpha_P)[(\alpha_R-1)q_R(1-c)-c]} = \underline{q}_P'$.

Third, note that $\overline{\tau}_R^r < \underline{\tau}_E^r\ \forall\, y$ if $\dfrac{c\alpha_R}{(\alpha_R-1)(c+q_R(1-c))} < \dfrac{q_E(1-c)}{c+q_E(1-c))}$ which holds only if $c < \dfrac{\sqrt{q_Eq_R}-q_Eq_R}{1-q_Eq_R} = \hat{c}_E^R$ and $\alpha_R \geq \dfrac{q_E(1-c)(c+q_R(1-c))}{(1-2c)q_Rq_E-c^2(1-q_Eq_R)} = \hat{\alpha}_R$. Otherwise, there is a $y = y_E^R$ such that $\underline{\tau}_E^r > \overline{\tau}_R^r$ if $y < y_E^R$, $\underline{\tau}_E^r = \overline{\tau}_R^r$ if $y = y_E^R$, and $\underline{\tau}_E^r < \overline{\tau}_R^r$ if $y > y_E^R$. $\overline{\tau}_R^r = \underline{\tau}_E^r$ if $\dfrac{q_RK-c\alpha_Ry_E^R}{y_E^R(1-\alpha_R)(c+q_R(1-c))} = \dfrac{q_E(1-c)}{c+q_E(1-c))}$ which after some algebra becomes $y_E^R = \frac{q_RK(c+q_E(1-c))}{q_E(1-c)(c+q_R(1-c))(1-\alpha_R)+c\alpha_R(c+q_E(1-c))}$.

Hence, there are six cases in which there is a range $(\tau, r=1)$ for which all groups are better off accepting $(\tau, r=1)$ rather than fighting when others accept it:

1. $q_P > q_E$, $\alpha_P \leq \hat{\alpha}_P$ and $q_R \leq \underline{q}_R$; 2. $q_P > q_E$, $\alpha_P \leq \hat{\alpha}_P$, $q_R > \underline{q}_R$ and $q_P < \underline{q}_P'$; 3. $q_P > q_E$, $\alpha_P > \hat{\alpha}_P$ and $c \geq \hat{c}_E^R$; 4. $q_P > q_E$, $\alpha_P > \hat{\alpha}_P$, $c < \hat{c}_E^R$ and $\alpha_R < \hat{\alpha}_R$; 5. $q_P \leq q_E$, $c \geq \hat{c}_E^R$; 6.

$q_P \leq q_E$, $c < \hat{c}_E^R$ and $\alpha_R < \hat{\alpha}_R$.

For the first two cases, $max\{\underline{\tau}_P^r, \underline{\tau}_E^r\} = \underline{\tau}_P^r$ and $\underline{\tau}_P^r \leq \overline{\tau}_R^r$ if $y \geq y_P^R$. For the latter four, depending on the rest of the parameter values, there are sub-cases where either $max\{\underline{\tau}_P^r, \underline{\tau}_E^r\} = \underline{\tau}_P^r$ or $max\{\underline{\tau}_P^r, \underline{\tau}_E^r\} = \underline{\tau}_E^r$; so for all these cases, $max\{\underline{\tau}_P^r, \underline{\tau}_E^r\} \leq \overline{\tau}_R^r$ if $y \geq max\{y_P^R, y_E^R\}$. It is easy to see that the income levels at which the tax constraints equal each other should be larger than the levels at which the constraint of the rich equals 0 and the constraint of the poor equals 1 since $\frac{d\underline{\tau}_E^r}{dy} = 0$, $\frac{d\underline{\tau}_P^r}{dy} < 0$ and $\frac{d\overline{\tau}_R^r}{dy} > 0$; therefore, both y_P^R and y_E^R are larger than $\underline{y}_P$ and $\underline{y}_R$.

Hence, the cases for which there is no set of policies $(\tau, r = 1)$ which would be accepted by all groups occur when either $c < \hat{c}_E^R$ and $\alpha_R \geq \hat{\alpha}_R$ in which case $\underline{\tau}_E^r > \overline{\tau}_R^r \; \forall \; y$; or $q_R > \underline{q}_R$ and $q_P \geq \underline{q}'_P$ in which case $\underline{\tau}_P^r > \overline{\tau}_R^r \; \forall \; y$. This also implies that it is sufficient for the existence of a set of points $(\tau, r = 1)$ for which all groups are better off accepting $(\tau, r = 1)$ rather than fighting if we have $c \geq \hat{c}_E^R$ and $q_P < \underline{q}'_P$, and $y > max\{y_P^R, y_E^R\}$. and all groups accept $(\tau^{dem}, r^{dem} = 1)$ when $max\{\underline{\tau}_P^r, \underline{\tau}_E^r\} < \tau^{dem} \leq \overline{\tau}_R^r$.

□

Proof (Proposition 1): Since none of the groups comprises a majority by itself, and I focus on equilibria where a joint platform if offered wins with certainty and voted by the groups whose candidate propose it, in order for $(\tau^{PR}, r^{PR} = 0)$ to win, P voters have to strictly prefer it over E's offer (1,1). Hence, it must be true that $U_P(\tau^{PR}, r^{PR} = 0) = (1 - \tau^{PR})\alpha_P y + \tau^{PR} y > U_P(1,1) = y - K$ which leads to $\tau^{PR} > 1 - \frac{K}{y(1-\alpha_P)} = \hat{\tau}^{PR}$. Since both voters of the rich and the poor from the majority split their votes between the candidates P and R, each of them should receive more votes than E which happens when $\frac{1}{2}(n_P + n_R) > n_E$. □

Proof (Corollary 1): It is obvious that since $K > 0$ and $1 - \alpha_P > 0$, $\frac{K}{y(1-\alpha_P)}$

decreases as y increases and hence $\hat{\tau}^{PR} = 1 - \dfrac{K}{y(1-\alpha_P)}$ increases as y increases. $\square$

Proof (Proposition 2)*:* We know from Lemma 2 when all groups accept the victory of a generic $(\tau^{dem}, r^{dem} = 0)$. Now, if $\tau^{dem} = \tau^{PR} > 1 - \dfrac{K}{y(1-\alpha_P)}$, then for the cases where the upper constraint on taxes because of the rich is binding, it must hold that $1 - \dfrac{K}{y(1-\alpha_P)} < \overline{\tau}_R = \dfrac{c\alpha_R}{(\alpha_R - 1)(c + q_R(1-c))}$. After a few steps of algebra, this condition becomes $y < \frac{K(\alpha_R-1)(c+q_R(1-c))}{(1-\alpha_P)(q_R(1-c)(\alpha_R-1)-c)} = y^{\overline{\tau}^R}_{\tau^{PR}}$. It is easy to see that $y^{\overline{\tau}^R}_{\tau^{PR}} > \overline{y}_E$ if $q_E < \underline{q}_E$ and $R < DK$ where $D = 1 + \frac{(\alpha_R-1)(c+q_R(1-c))(c\alpha_P+q_E(1-c)(\alpha_P-1))}{q_E(1-\alpha_P)(q_R(1-c)(\alpha_R-1)-c)} > 1$. If $q_E < \underline{q}_E$ and $R \geq DK$, $y^{\overline{\tau}^R}_{\tau^{PR}} \leq \overline{y}_E$. Also, note that $\underline{y}^R_E < y^{\overline{\tau}^R}_{\tau^{PR}}$ if $R < KE$ where $E = 1 + \frac{(\alpha_R-1)(c+q_R(1-c))(c-(1-\alpha_P)(c+q_E(1-c))+c\alpha_R(1-\alpha_P)(c+q_E(1-c))}{q_E(1-\alpha_P)(q_R(1-c)(\alpha_R-1)-c)}$; and $E > D$.

This implies that if $\tau^{PR} > 1 - \dfrac{K}{y(1-\alpha_P)}$, all groups accept $(\tau^{PR}, 0)$ under the following twelve cases with the corresponding lower and upper bounds on τ^{PR}:

If $q_E < \underline{q}_E$, 1) $q_P \leq \underline{q}_P, q_R \leq \underline{q}_R, y \geq \overline{y}_E$; 2) $q_P > \underline{q}_P, q_R \leq \underline{q}_R, y \geq \overline{y}_E$ and $\tau^{PR} \geq \underline{\tau}_P$; 3) $q_P \leq \underline{q}_P, q_R > \underline{q}_R$, $R < DK$, $y^{\overline{\tau}^R}_{\tau^{PR}} \geq y \geq \overline{y}_E$ and $\tau^{PR} \leq \overline{\tau}_R$; 4) $q_P \leq \underline{q}_P, q_R \leq \underline{q}_R, \underline{y}_E \leq y < \overline{y}_E$ and $\tau^{PR} \geq \underline{\tau}_E$; 5) $q_P > \underline{q}_P, q_R < \underline{q}_R, \underline{y}_E \leq y < \overline{y}_E$ and $\tau^{PR} \geq max\{\underline{\tau}_P, \underline{\tau}_E\}$; 6a) $q_P \leq \underline{q}_P, q_R > \underline{q}_R$, $R < DK$, $\underline{y}^R_E \leq y \leq \overline{y}_E$ and $\underline{\tau}_E \leq \tau^{PR} \leq \overline{\tau}_R$; 6b) $q_P \leq \underline{q}_P, q_R > \underline{q}_R$, $EK > R \geq DK$, $\underline{y}^R_E \leq y < y^{\overline{\tau}^R}_{\tau^{PR}}$ and $\underline{\tau}_E \leq \tau^{PR} \leq \overline{\tau}_R$; 7) $q_P > \underline{q}_P, q_R > \underline{q}_R$, $R < DK$, $y^{\tau^{PR}}_{\overline{\tau}_R} > y \geq \overline{y}_E$; $c \geq \underline{c}^R_P$, and $\underline{\tau}_P \leq \tau^{PR} \leq \overline{\tau}_R$; 8a) $q_P > \underline{q}_P, q_R > \underline{q}_R$, $R < DK$, $\underline{y}^R_E \leq y < \overline{y}_E$, and $c \geq \underline{c}^R_P$ and $max\{\underline{\tau}_P, \underline{\tau}_E\} \leq \tau^{PR} \leq \overline{\tau}_R$; 8b) $q_P > \underline{q}_P, q_R > \underline{q}_R$, $EK > R \geq DK$, $\underline{y}^R_E \leq y < y^{\overline{\tau}^R}_{\tau^{PR}}$, and $c \geq \underline{c}^R_P$ and $max\{\underline{\tau}_P, \underline{\tau}_E\} \leq \tau^{PR} \leq \overline{\tau}_R$; and if $q_E \geq \underline{q}_E$, 9) $q_P \leq \underline{q}_P, q_R \leq \underline{q}_R, y \geq \underline{y}_E$ and $\tau^{PR} \geq \underline{\tau}_E$; 10) $q_P > \underline{q}_P, q_R \leq \underline{q}_R, y \geq \underline{y}_E$ and $\tau^{PR} \geq max\{\underline{\tau}_P, \underline{\tau}_E\}$. 11) $q_P \leq \underline{q}_P, q_R > \underline{q}_R$, $R < EK$, $\underline{y}^R_E \leq y < y^{\overline{\tau}^R}_{\tau^{PR}}$, $c \geq \underline{c}^R_E$, and $\underline{\tau}_E \leq \tau^{dem} \leq \overline{\tau}_R$; 12) $q_P > \underline{q}_P, q_R > \underline{q}_R$, $R < EK$, $\underline{y}^R_E \leq y < y^{\overline{\tau}^R}_{\tau^{PR}}$, $c \geq \underline{c} = max\{\underline{c}^R_P, \underline{c}^R_E\}$, and $max\{\underline{\tau}_P, \underline{\tau}_E\} < \tau^{dem} \leq \overline{\tau}_R$.

Given these cases, it is easy to see that when $q_R \leq \underline{q}_R$, all groups accept the victory of $(\tau^{PR} > \hat{\tau}^{PR}, 0)$ if $y \geq \underline{y}_E$ and $\tau^{PR} \geq max\{\underline{\tau}_P, \underline{\tau}_E\}$. When $q_R > \underline{q}_R$, groups accept the victory of $(\tau^{PR} > \hat{\tau}^{PR}, 0)$ if $\underline{y}^R_E \leq y < y^{\overline{\tau}^R}_{\tau^{PR}}$, $c \geq \underline{c}$, and $max\{\underline{\tau}_P, \underline{\tau}_E\} \leq \tau^{PR} \leq \overline{\tau}_R$ and

$R < EK$ where $E > 1$. □

Proof (Proposition 3): E would have no incentives to deviate to points that would not win the elections if $U_E((\tau^{PR}, 0); (a, a, a)) = (1 - \tau^{PR})\alpha_P y + \tau^{PR} y \geq U_E(f, f, f) = q_P(1 - c)y + q_R\alpha_P y(1 - c) + q_E(y(1 - c) - K + R)$ which is equivalent to $y \geq \underline{y}_E^{f,f,f} = \frac{q_E(R - K)}{\alpha_P + (1 - \alpha_P)\tau^{PR} - (1 - c)(1 - q_R(1 - \alpha_P))}$ if $\tau^{PR} > \underline{\tau}_E^{f,f,f} = 1 - q_R(1 - c) - \frac{c}{1 - \alpha_P}$; otherwise, this inequality does not hold and E is always better off with all groups fighting each other. I use the superscript of (f, f, f) to denote that these are thresholds to ensure that players do not prefer all groups fighting each other. It is easy to see that $\frac{d\underline{y}_E^{f,f,f}}{d\alpha_P} = \frac{-q_E(R - K)(1 - \tau^{PR} - (1 - c)q_R)}{[\alpha_P + (1 - \alpha_P)\tau^{PR} - (1 - c)(1 - q_R(1 - \alpha_P))]^2}$. This derivative is negative when $\tau^{PR} < 1 - (1 - c)q_R$ and is positive when $\tau^{PR} > 1 - (1 - c)q_R$. □

Proof (Proposition 4): Throughout, I will use the same expressions for the tax rate and income thresholds from the proofs of previous propositions. First, we know from the proof of Proposition 1 that $(\tau^{PR}, 0)$ wins the elections if $\frac{1}{2}(n_P + n_R) > n_E$, and $\tau^{PR} > 1 - \frac{K}{y(1 - \alpha_P)}$. Second, we also know that $(\tau^{PR}, 0)$ is accepted by all if the conditions for one of the twelve cases listed in the proof of Proposition 2 hold. If in subgames following deviations to other platforms the equilibrium is (f, f, f), then from Proposition 3 we know that E has no incentives to deviate when $y \geq \underline{y}_E^{fff}$ and $\underline{\tau}_E^{fff} < \tau^{PR}$. P has no incentives to deviate if $U_P((\tau^{PR}, 0); (a, a, a)) = (1 - \tau^{PR})\alpha_P y + \tau^{PR} y \geq U_P(f, f, f) = q_P(1 - c)y + q_R\alpha_p y(1 - c) + q_E(y(1 - c) - K)$ which holds when $\tau^{PR} \geq 1 - q_R(1 - c) - \frac{c}{1 - \alpha_P} = \underline{\tau}_P^{fff}$; or $\tau^{PR} < 1 - q_R(1 - c) - \frac{c}{1 - \alpha_P}$ and $y < \frac{q_E K}{(1 - \alpha_P)(1 - q_R(1 - c)) - c}$. R has no incentives to deviate if $U_R((\tau^{PR}, 0); (a, a, a)) = (1 - \tau^{PR})\alpha_R y + \tau^{PR} y \geq U_R(f, f, f) = q_P(1 - c)y + q_R\alpha_R y(1 - c) + q_E(y(1 - c) - K)$ which holds unless $\tau^{PR} > 1 - q_R(1 - c) + \frac{c}{\alpha_R - 1} = \underline{\tau}_R^{fff}$ and $y > \frac{K(\alpha_R - 1)}{(1 - \alpha_P)(\alpha_R q_R(1 - c) - q_R(1 - c) - c)} = \underline{y}_R^{fff}$. So if only one of these conditions does not hold, it is sufficient to ensure that $U_R((\tau^{PR}, 0); (a, a, a)) \geq U_R(f, f, f)$. Also note that when $q_R \le \underline{q}_R = \dfrac{c}{(\alpha_R - 1)(1-c)}$, $\underline{\tau}_R^{fff} \ge 1$.

Then, using the results of Propositions 1 and 2, it is easy to see that there exists a SPE in which on the equilibrium path, candidates choose $\{(\tau^{PR}, r^{PR} = 0), (\tau^E = 1, r^E = 1); (accept, accept, accept)\}$ and $(\tau^{PR}, 0)$ wins the elections if $\frac{1}{2}(n_P + n_R) > n_E$, $q_R \le \underline{q}_R$, $\tau^{PR} > max\{\hat{\tau}^{PR}, \underline{\tau}_E^{fff}, \underline{\tau}_P, \underline{\tau}_E\}$, $y > max\{\underline{y}_E^{fff}, \underline{y}_E\}$ and (f, f, f) is the equilibrium in post-election subgames of platforms that make the deviator better off.

□

Proof (Proposition 5): First note that for an offer $(\tau, 1)$ to win the elections there must be a set of points $(\tau, r = 1)$ which both R and E voters weakly prefer to $(\tau^{PR}, 0)$. R would weakly prefer this offer of E $(\tau^E, 1)$ over $(\tau^{PR}, 0)$ if and only if $U_R(\tau^E, 1) \ge U_R(\tau^{PR}, 0)$ which is equivalent to $\tau^E \le \tau^{PR} - \dfrac{K}{y(\alpha_R - 1)}$. E weakly prefers $(\tau^E, 1)$ over $(\tau^{PR}, 0)$ if and only if $U_E(\tau^E, 1) \ge U_E(\tau^{PR}, 0)$ which is equivalent to $\tau^E \ge \tau^{PR} - \dfrac{R-K}{y(1-\alpha_P)}$. Hence, the set of points $(\tau^{RE}, 1)$ preferred by both R and E over $(\tau^{PR}, 0)$ is empty if $\tau^{PR} - \dfrac{R-K}{y(1-\alpha_P)} > \tau^{PR} - \dfrac{K}{y(\alpha_R - 1)}$ which is equivalent to $K > R\dfrac{\alpha_R - 1}{\alpha_R - \alpha_P} = \underline{K}$ or $R < \dfrac{\alpha_R - \alpha_P}{\alpha_R - 1}K = HK$. Now, also note that the largest tax rate τ^E that would still make R voters prefer $(\tau^E, 1)$ instead of $(\tau^{PR}, 0)$ is $\tau^{PR} - \dfrac{K}{y(\alpha_R - 1)} = \overline{\tau}_R - \dfrac{K}{y(\alpha_R - 1)} = \frac{c\alpha_R}{(\alpha_R - 1)(c + q_R(1-c))} - \dfrac{K}{y(\alpha_R - 1)}$. Hence, P would not accept the victory of $(\overline{\tau}_R - \frac{R-K}{y(1-\alpha_P)} < \tau < \overline{\tau}_R - \frac{K}{y(\alpha_R - 1)}, 1)$ if $\underline{\tau}_P^r = 1 - \dfrac{c}{(1-\alpha_P)(c + q_P(1-c))} + \dfrac{q_P K}{y(1-\alpha_P)(c + q_P(1-c))} > \overline{\tau}_R - \frac{K}{y(\alpha_R - 1)} = \frac{c\alpha_R}{(\alpha_R - 1)(c + q_R(1-c))} - \dfrac{K}{y(\alpha_R - 1)}$. Then, after a few steps of algebra, this inequality becomes $y[c\alpha_R(1-\alpha_P)(c + q_P(1-c)) + (\alpha_R - 1)(c + q_R(1-c))(c - (1-\alpha_P)(c + q_P(1-c))] < K[q_P(\alpha_R - 1)(c + q_R(1-c)) + (1-\alpha_P)(c + q_P(1-c))(c + q_R(1-c))]$. Now, when $c \ge \frac{\sqrt{q_P q_R} - q_P q_R}{1 - q_P q_R} = \underline{c}'_P$ the LHS of this inequality is positive and this inequality holds when $y < \frac{K[q_P(\alpha_R - 1)(c + q_R(1-c)) + (1-\alpha_P)(c + q_P(1-c))(c + q_R(1-c))]}{c\alpha_R(1-\alpha_P)(c + q_P(1-c)) + (\alpha_R - 1)(c + q_R(1-c))(c - (1-\alpha_P)(c + q_P(1-c))} = \underline{y}'_P$. If $c < \underline{c}'_P$, and $\alpha_P \le \frac{(\alpha_R - 1)(c + q_R(1-c))q_P(1-c) - c\alpha_R(c + q_P(1-c))}{(\alpha_R - 1)(c + q_R(1-c))(c + q_P(1-c)) - c\alpha_R(c + q_E(1-c))} = \hat{\alpha}_P$ it always holds since then the LHS is negative. When $\alpha_P > \hat{\alpha}_P$, it holds again when $y < \underline{y}'_P$. Hence, for this inequality to hold, it is sufficient to have $y < \underline{y}'_P$. □

PROOF (PROPOSITION 6): Note that if E offers $(\tau^E < \tau^{PR}, 0)$, $(\tau^{PR}, 0)$ would still win by the votes of P and E and we know from the proof of Proposition 3 that $U_E((\tau^{PR}, 0); (a, a, a)) \geq U_E(f, f, f)$ when $y \geq \underline{y}_E^{f,f,f}$ and $\tau^{PR} > \underline{\tau}_E^{f,f,f}$; otherwise, this inequality does not hold and E is always better off with all groups fighting each other. Second, note that if E offers $(\tau^E > \tau^{PR}, 0)$, it would win for sure since both P and E voters would be better off with $(\tau^E > \tau^{PR}, 0)$; and if all groups accept it, E would prefer this over $(\tau^{PR}, 0)$'s victory accepted by all. Given that $(\tau^{PR}, 0)$ is accepted by all on the equilibrium path, it is only R who might not accept the victory of $(\tau^E > \tau^{PR}, 0)$. Hence, there is no such $\tau^E > \tau^{PR}$ if and only if $q_R > \underline{q}_R$ and $\tau^{PR} = \overline{\tau}_R$. Finally, if there is a range of $(\tau, r = 1)$, which both R and E voters prefer to $(\tau^{PR}, 0)$, E would also win by offering a policy pair in that range.

We know from the proof of Proposition 5 that there is no such range when $R < HK$. Alternatively, we also know from Proposition 5 that E would have no incentives to deviate to $(\tau^E, 1)$ if $U_E((\tau^{PR}, 0); (a, a, a)) \geq U_E(f, f, f)$ and $y < \underline{y}'_P$.

R can not change the winner of the elections by deviating since $n_P = max\{n_P, n_R, n_E\}$. Hence, R would have incentives to deviate only if it would be better off when all groups fight each other following the deviation. Therefore, R has no incentives to deviate if $U_R((\tau^{PR}, 0); (a, a, a)) = (1 - \tau^{PR})\alpha_R y + \tau^{PR} y \geq U_R(f, f, f) = q_P(1 - c)y + q_R\alpha_R y(1 - c) + q_E(y(1 - c) - K)$ which, as we know from the proof of Proposition 4, holds unless $\tau^{PR} > 1 - q_R(1-c) + \dfrac{c}{\alpha_R - 1}$ and $y > \frac{K(\alpha_R - 1)}{(1-\alpha_P)(\alpha_R q_R(1-c) - q_R(1-c) - c)} = \underline{y}_R^{fff}$. So if only one of these conditions does not hold, it is sufficient to ensure that $U_R((\tau^{PR}, 0); (a, a, a)) \geq U_R(f, f, f)$.

It is easy to see that P can change the winner and be better off if the new winner is accepted by all groups only if $n_P = max\{n_P, n_R, n_E\}$ and P offers $(\tau^P > \tau^{PR}, 0)$. This implies that P has no incentives to deviate to $(\tau^P > \tau^{PR}, 0)$ when $q_R > \underline{q}_R$, $\tau^{PR} = \overline{\tau}_R$ and

$U_P((\tau^{PR},0);(a,a,a)) = (1-\tau^{PR})\alpha_P y + \tau^{PR} y \geq U_P(f,f,f) = q_P(1-c)y + q_R\alpha_p y(1-c) + q_E(y(1-c)-K)$ which holds when $\tau^{PR} \geq 1 - q_R(1-c) - \frac{c}{1-\alpha_P} = \underline{\tau}_P^{fff}$; or $\tau^{PR} < 1 - q_R(1-c) - \frac{c}{1-\alpha_P}$ and $y < \frac{q_E K}{(1-\alpha_P)(1-q_R(1-c))-c}$. Now, when $U_P((\tau^{PR},0);(a,a,a)) \geq U_P(f,f,f)$, P would not have an incentive to deviate to $(\tau^P < \tau^{PR}, 0)$ or to $(\tau^P, 1)$ since $(\tau^{PR}, 0)$ would still win if $n_P = max\{n_P, n_R, n_E\}$.

To recap the analysis so far, P would have no incentive to deviate to a different platform if $q_R > \underline{q}_R$, $\tau^{PR} = \overline{\tau}_R$, $\tau^{PR} > \underline{\tau}_P^{f,f,f} = \underline{\tau}_E^{f,f,f}$, or $\tau^{PR} < \underline{\tau}_P^{f,f,f}$ and $y < \underline{y}_P^{f,f,f}$. E would have no incentives to deviate if $y \geq \underline{y}_E^{f,f,f}$, $\tau^{PR} > \underline{\tau}_E^{f,f,f}$; $q_R > \underline{q}_R$, $\tau^{PR} = \overline{\tau}_R$ and $R < HK$, or $y < \underline{y}'_P$. R would have no incentives to deviate if $\tau^{PR} \leq 1 - q_R(1-c) + \frac{c}{\alpha_R - 1} = \underline{\tau}_R^{f,f,f}$ or $y < \frac{K(\alpha_R - 1)}{(1-\alpha_P)(\alpha_R q_R(1-c) - q_R(1-c) - c)}$.

Then, using also the analysis in the proof of propositions 1 and 2, it is easy to see that the following set of conditions is sufficient for the existence of a SPE in which on the equilibrium path, candidates choose $\{(\tau^{PR},0),(\tau^E = 1, r^E = 1);(accept, accept, accept)\}$ and $(\tau^{PR},0)$ wins the elections: $\frac{1}{2}(n_P + n_R) > n_E$, $q_R > \underline{q}_R$, $c > \underline{c} = max\{\underline{c}_P^R, \underline{c}_E^R\}$, $R < EK$, $\tau^{PR} = \overline{\tau}^R$; $max\{\underline{y}_E^{f,f,f}, \underline{y}_E^R\} \leq y \leq min\{y_{\tau^{PR}}^{\overline{\tau}^R}, \underline{y}'_P\}$ and $\underline{\tau}_E^{f,f,f} < \tau^{PR} = \overline{\tau}^R \leq \underline{\tau}_R^{f,f,f}$.

We should also ensure that the ranges for income and the elected tax rate do exist and $\overline{\tau}^R$ falls in that range. First, note that if $q_R > \underline{q}_R$, $\alpha_R > 1 + \frac{c}{q_R(1-c)}$ which implies that $\overline{\tau}^R < \underline{\tau}_R^{f,f,f}$. Also, note that $\underline{\tau}_E^{f,f,f} < \tau^{PR} = \overline{\tau}^R$ when $c > \frac{-q_R(1+2(1-q_R)(1-\alpha_P))}{2(1-q_R)(1-q_R(1-\alpha_P))} + \frac{\sqrt{[q_R(1+2(1-q_R)(1-\alpha_P))]^2 + 4(1-q_R)(1-q_R(1-\alpha_P))q_R(1-q_R)(1-\alpha_P)}}{2(1-q_R)(1-q_R(1-\alpha_P))} = \underline{c}'$; or when $c \leq \underline{c}'$ and $\alpha_R < \frac{(c+q_R(1-c))(1-q_R(1-c) - \frac{c}{1-\alpha_P})}{(c+q_R(1-c))(1-q_R(1-c) - \frac{c}{1-\alpha_P}) - c}$.

We know from the proof of Proposition 2 that $y_{\tau^{PR}}^{\overline{\tau}^R} > \underline{y}_E^R$ if $R < EK$. Also, to see when $y_{\tau^{PR}}^{\overline{\tau}^R} = \frac{K(\alpha_R - 1)(c + q_R(1-c))}{(1-\alpha_P)(q_R(1-c)(\alpha_R - 1) - c)} \geq \underline{y}_E^{f,f,f} = \frac{q_E(R-K)}{\alpha_P + (1-\alpha_P)\tau^{PR} - (1-c)(1-q_R(1-\alpha_P))}$, let us call $y_{\tau^{PR}}^{\overline{\tau}^R} = K\frac{A}{B}$ and $\underline{y}_E^{f,f,f} = \frac{q_E(R-K)}{C}$. Then, $K\frac{A}{B} \geq \frac{q_E(R-K)}{C}$ if $R \leq K(1+\frac{A}{B}\frac{C}{q_E})$ where $\frac{A}{B}\frac{C}{q_E} > 0$. Let us call $(1+\frac{A}{B}\frac{C}{q_E}) = F$.

To see when $\underline{y}'_P > \underline{y}_E^{f,f,f}$ and $\underline{y}'_P > \underline{y}_E^R$, call $\underline{y}'_P = \frac{K[q_P(\alpha_R-1)(c+q_R(1-c))+(1-\alpha_P)(c+q_P(1-c))(c+q_R(1-c))]}{c\alpha_R(1-\alpha_P)(c+q_P(1-c))+(\alpha_R-1)(c+q_R(1-c))(c-(1-\alpha_P)(c+q_P(1-c))}$ $= \frac{KL}{M}$ and call $\underline{y}_E^R = \frac{q_E(R-K)A}{N}$. Then, it is easy to see that $\underline{y}'_P > max\{\underline{y}_E^{f,f,f}, \underline{y}_E^R\}$ when $R < min\{K(1+\frac{LN}{q_E MA}), K(1+\frac{CL}{Mq_E})\} = GK$. This implies that for $R < min\{EK, FK, GK\}$, the range of income specified in the proposition is non-empty.

Hence, this establishes that there exists a SPE in which on the equilibrium path, candidates choose $\{(\tau^{PR}, 0), (\tau^E = 1, r^E = 1); (accept, accept, accept)\}$ and $(\tau^{PR}, 0)$ wins the elections if $\frac{1}{2}(n_P + n_R) > n_E$, $q_R > \underline{q}_R$, $c > \hat{c} = max\{\underline{c}, \underline{c}'\}$, $R < min\{EK, FK, GK\}$, $\tau^{PR} = \overline{\tau}^R$; and $max\{\underline{y}_E^{f,f,f}, \underline{y}_E^R\} = \underline{y} \leq y < min\{y_{\tau^{PR}}^{\overline{\tau}^R}, \underline{y}'_P\}$.

□

Proof (Proposition 7): Given that P offers (1,0), and P voters vote for (1,0), a joint platform of $(\tau^{RE}, 1)$ can receive all votes of R and E voters and win with certainty if they strictly prefer the joint platform over (1,0) and $\frac{1}{2}(n_E + n_R) > n_P$. R strictly prefers $(\tau, 1)$ over $(1, 0)$ if and only if $U_R(\tau, 1) > U_R(1, 0)$ which is equivalent to $\tau < 1 - \frac{K}{y(\alpha_R - 1)}$. E strictly prefers $(\tau, 1)$ over $(1, 0)$ if and only if $U_E(\tau, 1) > U_E(1, 0)$ which is equivalent to $\tau > 1 - \frac{R-K}{y(1-\alpha_P)}$. Hence, there is a set of points $(\tau^{RE}, 1)$ preferred by both R and E if and only if $1 - \frac{R-K}{y(1-\alpha_P)} < 1 - \frac{K}{y(\alpha_R - 1)}$ and $\frac{K}{y} < 1 - \frac{K}{y(\alpha_R - 1)}$ so that the tax rates that R prefers over (1,0) are in the feasible policy space. These conditions together imply that $K < min\{\frac{R(\alpha_R - 1)}{\alpha_R - \alpha_P}, \frac{y(\alpha_R - 1)}{\alpha_R}\}$. Hence, $(\tau^{RE}, 1)$ wins the elections if $1 - \frac{R-K}{y(1-\alpha_P)} < \tau^{RE} < 1 - \frac{K}{y(\alpha_R - 1)}$, $\frac{1}{2}(n_E + n_R) > n_P$, and $K < min\{\frac{R(\alpha_R - 1)}{\alpha_R - \alpha_P}, \frac{y(\alpha_R - 1)}{\alpha_R}\}$. □

Proof (Corollary 2): It is obvious that since $R - K > 0$ and $1 - \alpha_P > 0$, $\frac{R-K}{y(1-\alpha_P)}$ decreases as y increases and hence $\hat{\tau}^{RE} = 1 - \frac{R-K}{y(1-\alpha_P)}$ increases as y increases. □

Proof (Proposition 8): The conditions in Lemma 2 only ensure that there is a set of tax rates which if proposed with $r = 1$ would be accepted by all groups. To see when this set intersects with the set of policies which would win the elections by the votes of R and E which we defined in the proof of Proposition 7, first note that it would be sufficient for the intersection of these two sets to be non-empty if $\overline{\tau}^r_R > 1 - \frac{R-K}{y(1-\alpha_P)}$ and $max\{\underline{\tau}^r_P, \underline{\tau}^r_E\} < 1 - \frac{K}{y(\alpha_R - 1)}$.

Using the expression for $\overline{\tau}^r_R$, we find that $\overline{\tau}^r_R > 1 - \frac{R-K}{y(1-\alpha_P)}$ either when $q_R \leq \frac{c}{(\alpha_R-1)(1-c)}$ or when $q_R > \frac{c}{(\alpha_R-1)(1-c)}$ and $y < \frac{R(\alpha_R-1)(c+q_R(1-c))-K[q_R(\alpha_R-\alpha_P)+(1-q_R)c(\alpha_R-1)]}{(1-\alpha_P)((\alpha_R-1)q_R(1-c)-c)} = \underline{y}^{\overline{\tau}^r_R}_E$ where the super- and the subscripts denote that R's binding tax rate constraint is larger than the minimum tax rate at which E is still willing to offer a joint platform with R. Also, $\underline{\tau}^r_P = 1 - \frac{cy - q_P K}{y(1-\alpha_p)(c+q_P(1-c))} < 1 - \frac{K}{y(\alpha_R-1)}$ if $y > \frac{K[q_P(\alpha_R-1)+(1-\alpha_P)(c+q_P(1-c))]}{c(\alpha_R-1)} = \underline{y}^R_{\underline{\tau}^r_P}$ and $\underline{\tau}^r_E = \frac{q_E(1-c)}{c+q_E(1-c)} < 1 - \frac{K}{y(\alpha_R-1)}$ if $y > \frac{K(c+q_E(1-c))}{c(\alpha_R-1)} = \underline{y}^R_{\underline{\tau}^r_E}$. Finally, note that $\overline{\tau}^r_R > 1$ when $q_R < \underline{q}_R$ and $y > \frac{q_R K}{c+q_R(1-c)(1-\alpha_R)} = \overline{y}_R$ which is larger than $\underline{y}_R$.

Therefore, when $q_R < \underline{q}_R$, the winning policy $(\tau^{RE}, 1)$ is accepted by all groups when $max\{\underline{\tau}^r_P, \underline{\tau}^r_E, 1 - \frac{R-K}{y(1-\alpha_P)}\} < \tau^{RE} < 1 - \frac{K}{y(\alpha_R-1)}$ and $y > \hat{\underline{y}} = max\{\underline{y}^R_{\underline{\tau}^r_P}, \underline{y}^R_{\underline{\tau}^r_E}, \underline{y}_P, \overline{y}_R\}$. When $q_R \geq \underline{q}_R$, it would be accepted by all groups if $c \geq \hat{c}^R_E$, $q_P < \underline{q}'_P$, $max\{\underline{\tau}^r_P, \underline{\tau}^r_E, 1 - \frac{R-K}{y(1-\alpha_P)}\} < \tau^{RE} < min\{\overline{\tau}^r_R, 1 - \frac{K}{y(\alpha_R-1)}\}$; and $max\{y^R_P, y^R_E, \underline{y}^R_{\underline{\tau}^r_P}, \underline{y}^R_{\underline{\tau}^r_E}\} = \hat{\underline{y}}' < y < \underline{y}^{\overline{\tau}^r_R}_E$.

To see when the set of points that fall within the specified bounds of income is non-empty, call $max\{y^R_P, y^R_E, \underline{y}^R_{\underline{\tau}^r_P}, \underline{y}^R_{\underline{\tau}^r_E}\} = bK$ where $b > 0$ and $\underline{y}^{\overline{\tau}^r_R}_E = \frac{Rd - Ke}{f}$ where $d > 0, e > 0, f > 0$. Then it is easy to see that $max\{y^R_P, y^R_E, \underline{y}^R_{\underline{\tau}^r_P}, \underline{y}^R_{\underline{\tau}^r_E}\} < y < \underline{y}^{\overline{\tau}^r_R}_E$ when $R > \frac{K}{d}(bf+e) = gK$ where $g = \frac{bf+e}{d} > 0$.

Hence, this establishes that when $q_R \geq \underline{q}_R$, the winning policy $(\tau^{RE}, 1)$ is accepted by all groups if $c \geq \hat{c}^R_E$, $q_P < \underline{q}'_P$, $R > gK$, $\underline{\tau}^{RE} < \tau^{RE} < \overline{\tau}^{RE}$ and $\hat{\underline{y}}' < y < \underline{y}^{\overline{\tau}^r_R}_E$

where $\underline{\tau}^{RE} = max\{\underline{\tau}^r_P, \underline{\tau}^r_E, 1 - \frac{R-K}{y(1-\alpha_P)}\}$, $\overline{\tau}^{RE} = min\{\overline{\tau}^r_R, 1 - \frac{K}{y(\alpha_R - 1)}\}$, and $\underline{\hat{y}}' = max\{y^R_P, y^R_E, \underline{y}^R_{\underline{\tau}^r_P}, \underline{y}^R_{\underline{\tau}^r_E}\}$.

□

PROOF (PROPOSITION 9): If the equilibria of post-election subgames off the equilibrium path is (f,f,f), then, R has no incentives to deviate if $U_R((\tau^{RE},1);(a,a,a)) \geq U_R(f,f,f)$ which implies $(1-\tau^{RE})\alpha_R y + \tau^{RE}y - K \geq q_P y(1-c) + q_R\alpha_R y(1-c) + q_E(y(1-c)-K)$. This inequality holds either when $q_R < \frac{c}{(1-c)(\alpha_R-1)} = \underline{q}_R$ and $y \geq \frac{K(1-q_E)}{(1-\tau^{RE})\alpha_R + \tau^{RE} - (1-q_R)(1-c) - q_R\alpha_R(1-c)} = \underline{y}^{fff}_R$ or $q_R \geq \underline{q}_R$, $\tau^{RE} < 1 - q_R(1-c) + \frac{c}{\alpha_R - 1} = \underline{\tau}^{fff}_R$ and $y \geq \underline{y}^{fff}_R$.

Similarly, E would have no incentives to deviate if $U_E((\tau^{RE},1);(a,a,a)) \geq U_E(f,f,f)$ which implies that $U_E((\tau,1);(a,a,a)) = (1-\tau^{RE})\alpha_P y + \tau^{RE}y - K + R \geq U_E(f,f,f) = q_P y(1-c) + q_R\alpha_P y(1-c) + q_E(y(1-c)-K+R)$ which holds if $\tau^{RE} \geq 1 - q_R(1-c) - \frac{c}{1-\alpha_P} = \underline{\tau}^{fff}_E$; or $\tau^{RE} < \underline{\tau}^{fff}_E$ and $y \leq \frac{(R-K)(1-q_E)}{c-(1-\alpha_P)(1-q_R(1-c)) + \tau^{RE}(\alpha_P - 1)} = \underline{y}^{fff}_E$.

Finally P would have no incentive to deviate when $U_P((\tau^{RE},1);(a,a,a)) \geq U_P(f,f,f)$ which holds when $\tau^{RE} > 1 - q_R(1-c) - \frac{c}{1-\alpha_P} = \underline{\tau}^{fff}_P = \underline{\tau}^{fff}_E$ and $y \geq \frac{K(1-q_E)}{(1-\alpha_P)(1-q_R(1-c)) - c - \tau^{RE}(\alpha_P - 1)} = \underline{y}^{fff}_P$.

Then it is easy to see that given that $\tau^{RE} > max\{\underline{\tau}^r_P, \underline{\tau}^r_E, 1 - \frac{R-K}{y(1-\alpha_P)}\}$, a sufficient condition to ensure that E has no incentives to deviate is $1 - \frac{R-K}{y(1-\alpha_P)} > 1 - q_R(1-c) - \frac{c}{1-\alpha_P}$ which holds when $y > \frac{R-K}{c + q_R(1-c)(1-\alpha_P)} = y^{\tau^{RE}}_{\underline{\tau}^{fff}_E}$.

Hence, this establishes that there exists a SPE where on the equilibrium path, candidates choose $\{(\tau^P = 1, r^P = 0), (\tau^{RE}, r^{RE} = 1); (accept, accept, accept)\}$ and $(\tau^{RE}, r^{RE} = 1)$ wins the elections when conditions in Proposition 7 and 8 a. hold, $y > \underline{\hat{y}}^{fff} = max\{y^{\tau^{RE}}_{\underline{\tau}^{fff}_E}, \underline{y}^{fff}_R, \underline{y}^{fff}_P\}$ and (f,f,f) is the equilibrium in post-election subgames of platforms that make the deviator better off.

□

Proof (Proposition 10): To see when $\underline{\tau}_E > \tau^{RE} + \frac{K}{y(\alpha_R - 1)}$, first note that this inequality holds if $\frac{c\alpha_R}{(\alpha_R - 1)(c + q_R(1-c))} < 1 - \frac{K}{y(\alpha_R - 1)} - \frac{cy - q_E(R-K)}{y(1-\alpha_P)(c + q_E(1-c))}$. After a few steps of algebra, this inequality becomes

$$\frac{y(\alpha_R-1)(c+q_R(1-c)(1-\alpha_P)(c+q_E(1-c))-K(c+q_R(1-c))(1-\alpha_P)(c+q_E(1-c))}{y(\alpha_R-1)(c+q_R(1-c)(1-\alpha_P)(c+q_E(1-c))} - \frac{q_E K(\alpha_R-1)(c+q_R(1-c))-q_E R(\alpha_R-1)(c+q_R(1-c))+c\alpha_R y(1-\alpha_P)(c+q_E(1-c))+cy(\alpha_R-1)(c+q_R(1-c))}{y(\alpha_R-1)(c+q_R(1-c)(1-\alpha_P)(c+q_E(1-c))} > 0.$$

Since the denominator is positive, this inequality holds if the numerator is also positive which happens when $Rq_E(\alpha_R - 1)(c + q_R(1-c)) - K(c + q_R(1-c))((1-\alpha_P)(c + q_E(1-c)) + q_E(\alpha_R - 1)) > y[c\alpha_R(1-\alpha_P)(c+q_E(1-c)) - (\alpha_R - 1)(c + q_R(1-c))((1-\alpha_P)(c + q_E(1-c)) - c)]$. It is easy to see that when $c \geq \hat{c}_E^R$, the RHS is positive; so this inequality holds when $R > K(1 + \frac{(1-\alpha_P)(c + q_E(1-c))}{q_E(\alpha_R - 1)} = hK$ where $h = 1 + \frac{(1-\alpha_P)(c + q_E(1-c))}{q_E(\alpha_R - 1)}$; and $y < \frac{Rq_E(\alpha_R-1)(c+q_R(1-c))-K(c+q_R(1-c))((1-\alpha_P)(c+q_E(1-c))+q_E(\alpha_R-1))}{[c\alpha_R(1-\alpha_P)(c+q_E(1-c))-(\alpha_R-1)(c+q_R(1-c))((1-\alpha_P)(c+q_E(1-c))-c)]} = y_R^{\overline{\tau}_E}$.

□

Proof (Proposition 11): I start with R's incentives to deviate. First note that since $n_E = max\{n_P, n_R, n_E\}$, R can change the winner by offering $(\tau > \tau^{RE}, 1)$ and win by receiving the votes of group E which, if accepted by all, would make R worse off. Hence, R has no incentives to deviate to $(\tau > \tau^{RE}, 1)$ if $U_R((\tau^{RE}, 1); (a, a, a)) \geq U_E(f, f, f)$ which implies $(1 - \tau^{RE})\alpha_R y + \tau^{RE} y - K \geq q_P y(1-c) + q_R \alpha_R y(1-c) + q_E(y(1-c) - K)$. We know that this inequality holds either when $q_R < \frac{c}{(1-c)(\alpha_R - 1)} = \underline{q}_R =$ and $y \geq \frac{K(1-q_E)}{(1-\tau^{RE})\alpha_R + \tau^{RE} - (1-q_R)(1-c) - q_R\alpha_R(1-c)} = \underline{y}_R^{fff}$ or $q_R \geq \underline{q}_R$, $\tau^{RE} < 1 - q_R(1 - c) + \frac{c}{\alpha_R - 1} = \underline{\tau}_R^{fff}$ and $y \geq \underline{y}_R^{fff}$. If R deviates to $(\tau < \tau^{RE}, 1)$ or $(\tau, 0)$; $(\tau^{RE}, 1)$ would still win since $n_E = max\{n_P, n_R, n_E\}$. So, if $U_R((\tau^{RE}, 1); (a, a, a)) \geq U_E(f, f, f)$, R has also no incentives to deviate to those points.

We know that if E deviates to $(\tau, 0)$ or $(\tau < \tau^{RE}, 1)$, $(\tau^{RE}, 1)$ would still win since

$n_E = max\{n_P, n_R, n_E\}$. So, E has no incentives to deviate to $(\tau, 0)$ or $(\tau < \tau^{RE}, 1)$ if $U_E((\tau^{RE}, 1); (a, a, a)) \geq U_E(f, f, f)$ which implies, as we know from Proposition 9, that $U_E((\tau, 1); (a, a, a)) = (1 - \tau^{RE})\alpha_P y + \tau^{RE} y - K + R \geq U_E(f, f, f) = q_P y(1-c) + q_R \alpha_P y(1-c) + q_E(y(1-c) - K + R)$ which holds if $\tau^{RE} \geq 1 - q_R(1-c) - \frac{c}{1-\alpha_P} = \underline{\tau}_E^{fff}$; or $\tau^{RE} < \underline{\tau}_E^{fff}$ and $y \leq \frac{(R-K)(1-q_E)}{c-(1-\alpha_P)(1-q_R(1-c)) + \tau^{RE}(\alpha_P - 1)} = \underline{y}_E^{fff}$. If E deviates to $(\tau > \tau^{RE}, 1)$ it would win since $n_E = max\{n_P, n_R, n_E\}$ and E would be clearly better off if its victory would be accepted by all. Hence, given that $U_E((\tau^{RE}, 1); (a, a, a)) \geq U_E(f, f, f)$, a sufficient condition to ensure that E has no incentives to deviate to $(\tau > \tau^{RE}, 1)$ is that $q_R > \frac{c}{(\alpha_R - 1)(1-c)} = \underline{q}_R$ and $\tau^{RE} = \overline{\tau}_R^r$.

First, note that if P deviates to $(\tau > \tau^{RE}, 1)$ P would win by the votes of E and P. If it deviates to $((\tau^{RE} - \frac{K}{y(1-\alpha_P)} < \tau < \tau^{RE} + \frac{K}{y\alpha_R - 1)}), 0)$, P would also win with certainty by the votes of R and P. If P deviates to $(\tau < \tau^{RE}, 1), (\tau < \tau^{RE} - \frac{K}{y(1-\alpha_P)})$, or to $(\tau > \tau^{RE} + \frac{K}{y\alpha_R - 1)}, 0)$, $(\tau^{RE}, 1)$ would still win. So, P would have no incentives to deviate to $(\tau < \tau^{RE}, 1), (\tau < \tau^{RE} - \frac{K}{y(1-\alpha_P)})$, or to $(\tau > \tau^{RE} + \frac{K}{y\alpha_R - 1)}, 0)$ if $U_P((\tau^{RE}, 1); (a, a, a)) \geq U_P(f, f, f)$ which holds when $\tau^{RE} > 1 - q_R(1-c) - \frac{c}{1-\alpha_P} = \underline{\tau}_P^{fff} = \underline{\tau}_E^{fff}$ and $y \geq \frac{K(1-q_E)}{(1-\alpha_P)(1-q_R(1-c)) - c - \tau^{RE}(\alpha_P - 1)} = \underline{y}_P^{fff}$. P would be better off by deviating to $(\tau > \tau^{RE}, 1)$ or to $((\tau^{RE} - \frac{K}{y(1-\alpha_P)} < \tau < \tau^{RE} + \frac{K}{y\alpha_R - 1)}), 0)$ if the new winner would be accepted by all. Therefore, given that $U_P((\tau^{RE}, 1); (a, a, a)) \geq U_P(f, f, f)$, a sufficient condition to ensure that P has no incentives to deviate to $(\tau > \tau^{RE}, 1)$ is that $q_R > \frac{c}{(\alpha_R - 1)(1-c)}$ and $\tau^{RE} = \overline{\tau}_R^r$. Also, given that $U_P((\tau^{RE}, 1); (a, a, a)) \geq U_P(f, f, f)$, P also has no incentives to deviate to $((\tau^{RE} - \frac{K}{y(1-\alpha_P)} < \tau < \tau^{RE} + \frac{K}{y\alpha_R - 1)}), 0)$ if $\underline{\tau}_E > \tau^{RE} + \frac{K}{y(\alpha_R - 1)}$ so that none of the tax rates that P can offer and win the elections would be accepted by E. Alternatively, P would have no such incentives also when $q_R > \underline{q}_R$, and $\overline{\tau}_R < \tau^{RE} - \dfrac{K}{y(1-\alpha_P)}$; but these conditions do not hold when $\tau^{RE} = \overline{\tau}^r_R$, since $\overline{\tau}^r_R < \overline{\tau}_R$. Using the expression for $\underline{\tau}_E$, it is easy to see that this inequality holds if $y < \dfrac{1}{c} q_E(R-K)$ or $\tau^{RE} < 1 - \dfrac{K}{y(\alpha_R - 1)} - \dfrac{cy - q_E(R-K)}{y(1-\alpha_P)(c + q_E(1-c))}$.

To recapitulate the analysis so far, R has no incentive to deviate either when $q_R < \underline{q}_R$ and $y \geq \underline{y}^{fff}_R$; or $q_R \geq \underline{q}_R$, $\tau^{RE} < \underline{\tau}^{fff}_R$ and $y \geq \underline{y}^{fff}_R$. E has no incentives to deviate if $q_R > \underline{q}_R$, $\tau^{RE} = \overline{\tau}^r_R$, and either $\tau^{RE} \geq \underline{\tau}^{fff}_E$ or $\tau^{RE} < \underline{\tau}^{fff}_E$ and $y \leq \underline{y}^{fff}_E$. P has no incentives to deviate if $q_R > \underline{q}_R$, $\tau^{RE} = \overline{\tau}^r_R$, $\tau^{RE} > \underline{\tau}^{fff}_P = \underline{\tau}^{fff}_E$, $y \geq \underline{y}^{fff}_P$, and either $y < \dfrac{1}{c} q_E(R-K)$ or $\tau^{RE} < 1 - \dfrac{K}{y(\alpha_R - 1)} - \dfrac{cy - q_E(R-K)}{y(1-\alpha_P)(c + q_E(1-c))}$.

Hence, if candidates offer $\{(\tau^P = 1, r^P = 0), (\tau^{RE}, r^{RE} = 1)\}$, $(\tau^{RE}, 1)$ wins and the equilibrium of the sub-game following the victory of $(\tau^{RE}, 1)$ is $(accept, accept, accept)$, then the following set of conditions is sufficient to ensure that no candidate has an incentive to deviate: $q_R > \underline{q}_R$, $\underline{\tau}^{fff}_E = 1 - q_R(1-c) - \frac{c}{1-\alpha_p} < \tau^{RE} = \overline{\tau}^r_R < min\{\underline{\tau}^{fff}_R, 1 - \dfrac{K}{y(\alpha_R - 1)} - \dfrac{cy - q_E(R-K)}{y(1-\alpha_P)(c + q_E(1-c))}\}$ and $y > max\{\underline{y}^{fff}_P, \underline{y}^{fff}_R\}$.

Now, for these conditions to hold simultaneously, it must be true that $1 - q_R(1-c) - \dfrac{c}{1-\alpha_p} < \overline{\tau}^r_R$ which holds if $\alpha_P \geq 1 - \frac{c(c+q_R(1-c))}{q_R(1-q_R)(1-c)^2} = \underline{\alpha}^{\overline{\tau}^r_R}_{\underline{\tau}^{fff}_E}$ and $y > \frac{q_R K(1-\alpha_P)}{(\alpha_R - 1)[(c+q_R(1-c))(c+q_R(1-c)(1-\alpha_P)) - (1-\alpha_P)q_R(1-c)] + c(1-\alpha_P)} = \underline{y}^{\overline{\tau}^r_R}_{\underline{\tau}^{fff}_E}$; or, $\alpha_P < \underline{\alpha}^{\overline{\tau}^r_R}_{\underline{\tau}^{fff}_E}$, $\alpha_R < \frac{(1-\alpha_P)q_R(1-c) + c(1-\alpha_P) - (c+q_R(1-c))(c+q_R(1-c)(1-\alpha_p))}{(1-\alpha_P)q_R(1-c) - (c+q_R(1-c))(c+q_R(1-c)(1-\alpha_P))}$ and $y > \underline{y}^{\overline{\tau}^r_R}_{\underline{\tau}^{fff}_E}$.

Second, note that when $q_R > \dfrac{c}{(1-c)(\alpha_R - 1)}$, $\overline{\tau}_R < 1 - q_R(1-c) + \dfrac{c}{\alpha_R - 1}$; hence, since $\overline{\tau}^r_R < \overline{\tau}_R$, when $q_R > \dfrac{c}{(1-c)(\alpha_R - 1)}$, it must be the case that $\overline{\tau}^r_R < 1 - q_R(1-c) + \dfrac{c}{\alpha_R - 1}$. Finally, we know from the proof of Proposition 10 that $\overline{\tau}^r_R < 1 - \frac{K}{y(\alpha_R - 1)} - \dfrac{cy - q_E(R-K)}{y(1-\alpha_P)(c + q_E(1-c))}$ when $R > hK$ and $y < y^{\overline{\tau}_E}_R$.

The above analysis implies that the inequality $1 - q_R(1-c) - \frac{c}{1-\alpha_p} < \tau^{RE} = \overline{\tau}^r_R < min\{1 - \frac{K}{y(\alpha_R - 1)} - \dfrac{cy - q_E(R-K)}{y(1-\alpha_P)(c + q_E(1-c))}, 1 - q_R(1-c) + \dfrac{c}{\alpha_R - 1}\}$ holds if $y^{\overline{\tau}_E}_R > y > \underline{y}^{\overline{\tau}^r_R}_{\underline{\tau}^{fff}_E}$, $\alpha_P > \underline{\alpha}^{\overline{\tau}^r_R}_{\underline{\tau}^{fff}_E}$ and $R > hK$. Hence, the above set of sufficient conditions about the income and the range of the tax rates to ensure that no candidate has an incentive to deviate becomes $y_R^{\overline{\tau}_E} > y > max\{\underline{y}^{\overline{\tau}^r_R}_{\underline{\tau}_E^{fff}}, \underline{y}_P^{fff}, \underline{y}_R^{fff}\} = \underline{\hat{y}}''$, $R > hK$ and $\alpha_P > \underline{\alpha}^{\overline{\tau}^r_R}_{\underline{\tau}_E^{fff}}$.

To see when $\underline{\hat{y}}'' < y_R^{\overline{\tau}_E}$, call $y_R^{\overline{\tau}_E} = \frac{Rq_E(\alpha_R-1)(c+q_R(1-c))-K(c+q_R(1-c))((1-\alpha_P)(c+q_E(1-c))+q_E(\alpha_R-1))}{[c\alpha_R(1-\alpha_P)(c+q_E(1-c))-(\alpha_R-1)(c+q_R(1-c))((1-\alpha_P)(c+q_E(1-c))-c)]} = \dfrac{Rq_Ed-Km}{n}$ and $\underline{\hat{y}}'' = Kj$. Then, $\underline{\hat{y}}'' < y_R^{\overline{\tau}_E}$ if $R > \dfrac{1}{q_Ed}K(jn+m) = pK$ where $p = \dfrac{jn+m}{q_Ed}$.

Similarly, $\underline{y}_E^{\overline{\tau}^r_R} = \dfrac{Rd-Ke}{f} > \underline{\hat{y}}'' = Kj$ if $R > \dfrac{1}{d}K(jf+e) = tK$; and $y_R^{\overline{\tau}_E} = \dfrac{Rq_Ed-Km}{n} > max\{y_P^R, y_E^R, \underline{y}^R_{\underline{\tau}_P^r}, \underline{y}^R_{\underline{\tau}_E^r}\} = \underline{\hat{y}}' = bK$ if $R > \dfrac{1}{q_Ed}K(bn+m) = uK$; so it is sufficient to have $R > max\{gK, pK, tK, uK\}$ so that $max\{\underline{\hat{y}}', \underline{\hat{y}}''\} < min\{\underline{y}_E^{\overline{\tau}^r_R}, y_R^{\overline{\tau}_E}\}$. Using the results in Proposition 7, we now know that $\overline{\tau}^r_R$ wins the elections by the votes of R and E when $\dfrac{1}{2}(n_R+n_E) > n_P$ and $y \geq max\{K\dfrac{\alpha_R}{\alpha_R-1}, K\dfrac{(\alpha_R-1)(c+q_R(1-c))+q_R}{c\alpha_R}\} = \underline{\hat{y}}'''$. Call $\underline{\hat{y}}''' = sK$. Then, it is easy to see that $\underline{\hat{y}}''' < y_R^{\overline{\tau}_E}$ if $R > K\dfrac{sn+m}{q_Ed} = vK$ and $\underline{\hat{y}}''' < \underline{y}_E^{\overline{\tau}^r_R}$ if $R > K\dfrac{sf+e}{d} = yK$.

Hence, this establishes that there exists a SPE where on the equilibrium path candidates choose $\{(\tau^P = 1, r^P = 0), (\tau^{RE}, 1); (accept, accept, accept)\}$ and $(\tau^{RE}, 1)$ wins the elections when $\frac{1}{2}(n_R+n_E) > n_P$, $c > \hat{c}_E^R, q_P < \underline{q}'_P$, $q_R > \underline{q}_R$, $\alpha_P > \underline{\alpha}_P = \underline{\alpha}^{\overline{\tau}^r_R}_{\underline{\tau}_E^{fff}}, max\{\underline{\hat{y}}', \underline{\hat{y}}'', \underline{\hat{y}}'''\} < y < min\{\underline{y}_E^{\overline{\tau}^r_R}, y_R^{\overline{\tau}_E}\}$, $R > max\{gK, hK, pK, tK, uK, vK, yK\} = zK$ and $\tau^{RE} = \overline{\tau}^r_R$.

□

Proof (Corollary 3): We know that $\overline{\tau}_R = \dfrac{c\alpha_R}{(\alpha_R-1)(c+q_R(1-c))}$ and $\overline{\tau}^r_R = \dfrac{c\alpha_Ry - q_RK}{y(\alpha_R-1)(c+q_R(1-c))} = \dfrac{c\alpha_R}{(\alpha_R-1)(c+q_R(1-c))} - \dfrac{q_RK}{y(\alpha_R-1)(c+q_R(1-c))}$; hence $\overline{\tau}^r_R < \overline{\tau}_R \forall y$. Now, we know that $\tau^{PR} > 1 - \dfrac{K}{y(1-\alpha_P)}$ and $1 - \dfrac{R-K}{y(1-\alpha_P)} < \tau^{RE} < 1 - \dfrac{K}{y(\alpha_R-1)}$. Hence, there is a range of values for the tax rate that the joint platform of P and R can offer and win and which would be lower than the tax rate offered by joint platform of R and E if $1 - \dfrac{K}{y(1-\alpha_P)} < 1 - \dfrac{K}{y(\alpha_R-1)}$ which holds when $\dfrac{1-\alpha_P}{\alpha_R-1} < 1$.

□

9 References

Acemoglu, Daron and James Robinson. 2006. *Economic Origins of Dictatorship and Democracy.* Cambridge University Press.

Alesina, Alberto, Reza Baqir, William Easterly. 1999. "Public Goods and Ethnic Divisions". *Quarterly Journal of Economics, 114*: 1243-84.

Alesina Alberto and Eliana La Ferrara. 2005. "Ethnic Diversity and Economic Performance". *Journal of Economic Literature, 43*: pp. 762-800.

Anderson, Benedict. 1983. *Imagined Communities.* London: Verso.

Austen-Smith, David and Michael Wallerstein. 2006. "Redistribution and affirmative action". *Journal of Public Economics, 90*: pp. 1789-1823.

Bandiera, Oriana and Gilat Levy. 2008. "The Diminishing Effect of Democracy in Diverse Societies". Working paper.

Barry, Brian 1975. "Political Accomodation and Consociational Democracy". *British Journal of Political Science, 5*: pp 477-505.

Bartolini, Stephano and Mair, Peter. 1990. *Identity, Competition and Electoral Availabilty.* Cambridge: Cambridge University Press.

Benhabib, Jess and Adam Przeworski. 2006. "The Political Economy of Redistribution Under Democracy." *Economic Theory.* October, Vol. 29, pp. 271-90.

Besley, Timothy and Stephen Coate. 1997. "An Economic Model of Representative Democracy." *Quarterly Journal of Economics* 112 (February): 85-114.

Bogaards, Matthijs 2000. "The Uneasy Relationship Between Empirical and Normative Types in Consociational Theory". *Journal of Theoretical Politics, 12*: pp. 395-423.

Boix, Carles. 2003. *Democracy and Redistribution.* Cambridge: Cambridge University

Press.

Brambor, Thomas, William Roberts Clark, Matt Golder. 2005. “Understanding Interaction Models: Improving Empirical Analyses”. *Political Analysis* 13: 1-20

Chandra, Kanchan. 2004. *Why Ethnic Parties Succeed.* Cambridge: Cambridge University Press.

Chandra, Kanchan. 2005. Ethnic Parties and Democratic Stability. *Perspectives on Politics* 3 (2): pp. 397-424.

Chandra, Kanchan. 2006. ”What is Ethnic Identity and Does it Matter?” *Annual Review of Political Science, 9*: pp. 397-424.

Chandra, Kanchan and Steven Wilkinson. 2008. ”Measuring the Effect of Ethnicity”. *Comparative Political Studies, 41*: pp. 515-563.

Collier, David and Anke Hoeffler. 2004. “Greed and Grievance in Civil War”. *Oxford Economic Papers* 56: 563-595.

Coser, Lewis. 1956. *The Functions of Social Conflict.* Glencoe, IL: The Free Press.

Daalder, Hans. 1981. “Consociationalism, Center and the Periphery and the Netherlands” In *Mobilization, Center-Periphery Structures and Nation-Building*, Per Torsvik (ed.). Bergen

Daalder 1984. “On the Origins of the Consociational Democracy Model” *Acta Politica 19*: 97-116.

Dahl, Robert. 1956. *A Preface to Democratic Theory.* Chicago: University of Chicago Press.

Dahl, Robert. 1971. *Polyarchy: Participation and opposition.* New Haven: Yale University Press.

Dahrendorf, Ralf. 1959. *Class and Conflict in Industrial Society*. Stanford: Stanford University Press.

Fearon, James and David Laitin. 2003."Ethnicity, Insurgency and Civil War". *American Political Science Review*. Vol. 97, No:1.

Gellner, Ernest. 1983. *Nations and Nationalism*. Ithaca, NY: Cornell University Press.

Golder, Matt. 2006. Presidential Candidates and Legislative Fragmentation. *American Journal of Political Science* 50: 34-48.

Gunter, Michael. 1990. *The Kurds In Turkey: A Political Dilemma*. Boulder: Westview Press.

Horowitz, Donald. 1985. *Ethnic Groups in Conflict*. California: University of California Press.

Horowitz, Donald. 1991. *A Democratic South Africa? Constitutional Engineering in a Divided Society*. Berkeley: University of California Press.

Horowitz, Donald. 2002. "Constitutional Design: Proposals versus Processes" in *The Architecture of Democracy*. Andrew Reynolds (ed.). Oxford University Press.

Huber, John and Piero Stanig. 2007. "Redistribution through Taxes and Charity: The Cost of Compassioinate Conservatism to the Secular Poor". Working Paper.

Lehmbruch, Gerhard. 1974. "A Non-Competitive Pattern of Conflict Management in Liberal Democracies: The Case of Switzerland, Austria and Lebanon" in *Consociational Democracy: Political Accomodation in Segmented Societies*. Kenneth McRae (ed.). Toronto: McClelland and Stewart.

Lieberman, Evan S. and Prerna Singh. 2008. "Insititutionalized Ethnicity: Measuring the State's Use of Ethnic Categories in 16 Countries (1900-2000)". Paper delivered at APSA Meeting, Boston, MA, August 29, 2008.

Lijphart, Arendt. 1969. Consociational Democracy. *World Politics. 21.*

Lijphart, Arendt. 1977. *Democracy in Plural Societies.* New Haven: Yale University Press.

Lijphart, Arendt. 1985. *Power-Sharing in South Africa.* Berkeley: Institute of International Affairs, University of California.

Lijphart, Arendt. 1999. *Patterns of Democracy: Government Forms and Performance in 36 Countries.* New Haven: Yale University Press.

Lijphart, Arendt. 2002. "The Wave of Power-Sharing Democracy" in *The Architecture of Democracy.* Andrew Reynolds (ed.). Oxford University Press.

Lijphart, Arendt. 2004. Constitutional Design for Divided Societies. *Journal of Democracy*, April 2004: pp. 96-109.

Lipset, Seymour. 1960. *Political Man.* Garden City, NY: Doubleday.

Lustick Ian. 1997. Lijphart, Lakatos, Consociationalism. World Politics, 50: 88-117.

Norris, Pippa. 2002. Ballots Not Bullets: Testing Consociational Theories of Ethnic Conflict, Electoral Systems and Democratization. in *The Architecture of Democracy.* Andrew Reynolds (ed.). Oxford University Press.

Osborne, Martin J. and Al Slivinski. 1996. "A Model of Political Competition with Citizen-Candidates". *Quarterly Journal of Economics* 111 (February): 65-96.

Ozdag, Umit. 2009. *Pusu ve Katliamlarin Kronolojisi: PKK.nin Gerceklestirdigi Toplu Katliamlar.* Ankara: Kripto.

Posner, Daniel. 2005. *Institutions and Ethnic Politics in Africa.* Cambridge University Press.

Przeworski, Adam. 2005. "Democracy as an Equilibrium." *Public Choice, 123*: pp.

253-273.

Rabushka, Alvin and Kenneth Shepsle. 1972. *Politics in Plural Societies: A theory in democratic instability*. Columbus, OH: Charles E. Merrill.

Reilly, Benjamin. 1997. Preferential Voting and Political Engineering: A Comparative Study. *Journal of Commonwealth and Comparative Politics, 35:* 1-19.

Reilly, Benjamin. 2001. *Democracy in Divided Societies: Electoral Engineering for Conflict Management*. Cambridge: Cambridge University Press.

Reynolds, Andrew. 2002. ed. *The Architecture of Democracy*. Oxford University Press

Roemer, John. 1998. "Why do the poor not expropriate the rich: an old argument in new garb." *Journal of Public Economics, 70*: pp. 399-424.

Roemer, John, Woojin Lee, Karine van der Straeten. 2007. *Racism, Xenophobia and Distribution: Multi-Issue Politics in Advanced Democracies.* New York and Cambridge: Russell Sage Foundation and Harvard University Press.

Sambanis, Nicolas. 2004. Poverty and the Organization of Political Violence: A Review and Some Conjectures. Manuscript.

Sisk, Timothy. 1996. *Power-Sharing and International Mediation in Ethnic Conflicts*. Washington, DC: US Institute of Peace Press.

Simmel, Georg. 1995. *Conflict and the Web of Group Affiliations*. Glencoe, IL: Free Press.

Varshney, Ashutosh. 2001. *Ethnic Conflict and Civic Life*. New Haven: Yale University Press.

Wilkinson, Stephen. 2004. *Votes and Violence: Electoral Competition and Ethnic Riots in India*. Cambridge University Press.