A Theory of Identity Politics, Redistribution, and Democratic Stability

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Abstract

How does economic inequality affect democratic stability when there is inter-group conflict both over income redistribution and ethnic identity-based policies? I answer this question by constructing a game-theoretic model of two-dimensional electoral competition, in which the rich and two poor groups from an ethnic majority and minority compete in elections, and the groups resort to violence if they are dissatisfied with election results. First, I show that if the poor minority group has ethnic grievances after elections, they have stronger incentives to initiate a fight when income distribution is more equal. Second, I also show that attempts of the minority to change the identity-based policy decision democratically may fail because of its redistributive consequences for groups in ethnic majority. I present quantitative and qualitative evidence from cases of inter-group conflict in Western Balkans (a region with high ethnic diversity and groups with ethnic grievances) that is consistent with the empirical implications of the model.

Keywords: income inequality, redistribution, democratic stability, ethnic diversity

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1 Introduction

How does economic inequality affect democratic stability? The prevailing theories of democratic consolidation claim that lower income inequality makes democracies more stable by reducing the intensity of redistributive conflict. The causal mechanism underlying this relationship is that when income inequality is low, redistribution levels adopted by the poor majority in a democracy are not too costly for the rich. Therefore, the rich prefer a democratic regime over launching a coup and initiating a costly and risky transition to autocracy in which they make policy choices themselves.

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 have conflicting preferences also over ethnic identity-based policies such as official languages or religions of a state, preferential policies favoring members of specific ethnic groups, or political autonomy for minorities. How does income inequality affect democratic stability when there is inter-group conflict over both identity-based policies and redistribution of income?

In this paper, I answer this question by constructing a game-theoretic model of two-dimensional electoral competition, in which the rich and two poor groups from an ethnic majority and minority compete in elections, and the groups resort to violence if they are dissatisfied with election results. It is well known that for a general class of preference profiles, majority rule equilibrium does not exist in multi-dimensional policy spaces (Feld et

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1. The well-known examples are Acemoğlu and Robinson (2006), Boix (2003, 2008), and Przeworski (2005). For a study that tests this claim empirically and finds strong support for it, see Houle (2009).

2. I employ a broad definition of the concept as specified by Horowitz (1985: 53) and followed by several other researchers (see e.g. Chandra 2004, Lieberman and Singh 2012) that classifies groups based on ascriptive categories such as language, religion, race, tribe or sect, as ethnic. A comprehensive discussion of the term ethnic identity in political science can be found in Chandra (2006).

3. For instance, Sri Lanka, India, and Turkey are democratic cases where inter-group conflict over these policies has led either to the collapse of democratic regimes or to significant amounts of violence in the form of riots, civil wars and rebellions.
al. 1989, McKelvey 1976, and Plott 1967). However, in my model, majority rule equilibria emerge since policy platforms which are preferred by an alternative majority of voters lead to the initiation of violent conflict by one of the rival groups after the elections. Therefore, in equilibrium, policy-motivated candidates who are better off under alternative platforms have no incentive to offer them as long as they do not prefer violent conflict over the elected platform.

The model shows that when a democracy redistributes income to a poor ethnic minority but does not address their identity-based demands, the minority has stronger incentives to initiate a fight when income distribution is more equal. The intuition for this result is as follows: If a poor ethnic minority initiates and loses a fight against the majority, it loses the benefits of redistribution that are in place before the start of the fight. Minority’s loss in redistribution is smaller when their income is closer to the mean income in the country. Therefore, the minority has stronger incentives to start a fight when there is less income inequality between them and the majority.

Theoretically, the model contributes to our understanding of the relationship between economic inequality and democratic consolidation in a society where groups are divided along economic as well as ethnic lines. More specifically, my analysis indicates that higher income inequality between ethnic groups makes democracies less stable only if the level of redistribution in peaceful times is low, and therefore the minority doesn’t have much to lose from a reduction in redistribution if it starts and loses a fight against the majority. However, if the level of redistribution in peaceful times is high, higher income inequality between ethnic groups makes democracies more stable because poorer ethnic minorities have more to lose from initiating a fight in a highly redistributive democracy. Therefore, in contrast to analyses of societies divided only along class lines (Acemoğlu and Robinson 2006, Boix 2003, 4Epstein, Leventoğlu, and O’Halloran (2012) provides an analysis of transition to democracy from autocracy in societies similarly divided both along economic as well as ethnic lines.)
and Przeworski 2005), my model shows that greater income inequality is not necessarily more harmful for democratic consolidation in societies divided along economic as well as ethnic lines.

The model has implications also for previous empirical research, which has documented that horizontal inequality -that is, inequality between culturally defined groups- makes civil conflict more likely. This line of research has examined how horizontal inequality affects both relatively poorer and relatively wealthier ethnic groups’ incentives for violence (Cederman et al. 2011, 2013; Stewart 2008). My paper does not address the effects of horizontal inequality on richer ethnic groups’ incentives for violence. However, when it comes to poor ethnic groups, my analysis indicates that horizontal inequality should make them more prone to conflict only in societies with low levels of redistribution. In societies with high levels of redistribution, horizontal inequality should make poorer ethnic groups less prone to conflict. This suggests that empirical analyses of horizontal inequality and civil conflict should take into account the interaction effect between horizontal inequality and level of redistribution on poor ethnic groups’ incentives for violence.

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 game-theoretic model. In the fourth section, I prove the existence of equilibria in which the identity-based policy is not adopted and the incentives of the minority to respond by fighting are stronger when income distribution is more equal. The fifth section presents evidence from cases of inter-group conflict that is consistent with the result of the model. The sixth section concludes. All proofs, figures, and tables are in the appendix.
2 Literature Review

My paper relates most closely to the literature on the political economy of democratic consolidation, which has focused on conflict of income redistribution as the key mechanism determining chances of democratization and democratic stability across countries (Acemoğlu and Robinson 2006, Boix 2003, Przeworski 2005). 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 question of how politicized identities along the lines of language, race or religion can influence chances of democratization. An exception to this pattern is Epstein, Leventoğlu and O’Halloran (2012), which focuses on determinants of democratization in a society with both class and ethnic divisions. The key difference between Epstein, Leventoğlu and O’Halloran (2012) and my paper is that I examine determinants of democratic consolidation and stability in ethnically divided societies, while their paper focuses on transitions from autocracy to democracy, the degree of violence involved in those transitions, and whether the new democracies revolve around class-based or ethnic group-based coalitions.

My paper is also closely related to the theoretical and empirical literature on ethnic violence. The main difference between my model and the rest of the theoretical work in this area is that the minority values not only the identity-based policy but also policies of income redistribution. Recent empirical studies show that income inequality between ethnic groups increases the likelihood of civil wars (Cederman et al. 2011, 2013). Houle (2015) shows that inequality between ethnic groups can also increase the likelihood of democratic collapse when inequality within ethnic groups is low. Kuhn and Weidmann (2015) show that greater economic inequality within an ethnic group significantly increases the risk of civil war.

onset, when there are also political or economic inequalities between groups. These studies focus on conflict over redistribution as one of the causes of violent conflict between different ethnic groups. My model allows me to analyze how income inequality and redistribution between ethnic groups together can affect the incentives of an ethnic minority to turn violent, and shows that higher inequality does not translate into greater likelihood of conflict if redistribution level in a democracy is sufficiently high.

Thirdly, there is a separate line of research on the choice of economic policy in ethnically diverse democracies. In this body of work, 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 2011, and Bandiera and Levy 2011). In contrast to my model, in this literature, the political actors do not have the option of abolishing the democratic framework in the face of undesirable policy outcomes after elections.

Finally, there is also a growing literature that examines specifically the theoretical and empirical relationship between voting and violence. In this literature, voting and violence are either seen as substitutes (Chacon et al. 2011) or complements (Wilkinson 2004).6 My paper also starts from the premise that voting and violence can be used as substitutes by political actors. In contrast to earlier work, I investigate this relationship in a political environment, where the preferences of the players diverge on a two-dimensional policy space.

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3 The Model

My core model is a game between three players who are candidates for political office representing three different groups. The candidates are policy motivated and are labeled $P$ (representing the poor from the ethnic majority), $R$ (the rich from the ethnic majority) and $E$ (the poor ethnic minority). (Henceforth, I will refer to these groups as poor, rich, and the minority, respectively.) The size of the total population is normalized to 1. Group shares of the population are denoted by $n_i$ with $n_i < \frac{1}{2}$, $n_P > n_E > n_R$, and $\sum_i n_i = 1$. None of these groups comprises a majority of the population by itself, and the poor is the largest group while the rich is the smallest.

The policy space is two-dimensional: a non-negative tax rate $\tau \in [0,1]$ the proceeds of which are redistributed lump-sum to all citizens, and a binary policy decision on whether to implement an identity-based policy $r \in \{0,1\}$, which is financed out of the public budget.

Hence, the government budget constraint is $\tau y = T + Kr$ where $y$ is the mean income, $T$ is the amount of lump-sum transfers and $K$ is a cost parameter that denotes how costly the identity-based policy is. When $r = 1$ and the identity-based policy is adopted, the minimum tax rate is $K y$ so that the public budget is at least large enough to finance this policy.

Players’ preferences are represented by the following utility function:

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

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

$$I_E = \begin{cases} 1 & \text{if } i = E \text{ and } r = 1 \\ 0 & \text{otherwise} \end{cases}$$
As the indicator function highlights, the policy \( r \) benefits only the minority. I assume that the net benefit of this policy \( (D - K) \) is positive for the minority. This policy can be thought of in a variety of ways, such as making the language of the minority an official language, 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. Also, since both the poor and the minority have market incomes below the mean, their utility increases in \( \tau \), while the utility of the rich, who has a market income above the mean, is decreasing in \( \tau \).

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

Figure 1 shows the policy space and the location of groups’ ideal points.

The timing of events is as follows:

1. The candidates announce policy platforms \( (\tau^i, r^i) \) 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. 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. I denote the winning platform by \( (\tau^W, r^W) \).

2. Having seen the results of the elections, candidates simultaneously decide whether to accept the results or to start a fight in order to implement their ideal policy. The actions taken in the second stage are denoted by \( (a^P, a^R, a^E) \) where \( a^i \in A^i = \{\text{accept, fight}\} \). So if \((a^P, a^R, a^E) = (\text{accept, accept, accept})\), 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 \((a^P, a^R, a^E) = (\text{accept, accept, fight})\), this means that \(E\) is fighting to implement its ideal policy while \(P\) and \(R\) fight against \(E\) to preserve the winning policy \((\tau^W, r^W)\).\(^7\) If the belligerent candidate wins the fight, he implements his ideal policy. If the belligerent candidate loses the fight against a candidate that wants to preserve the democratic outcome, the winning policy is implemented. If the belligerent candidate loses the fight against another belligerent candidate, the ideal policy of the victorious candidate is implemented. In the remainder of the paper, I will call actions in which one candidate plays \textit{fight} while the others play \textit{accept} in the second stage “unilateral fighting”. I will call actions in which two candidates play \textit{fight} while the third candidate plays \textit{accept} “bilateral fighting”. I will call actions in which all candidates play \textit{fight} “inter-group fighting”.

Fighting is costly in that it makes the country poorer by the amount of \(cy\) where \(c \in (0,1)\). 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 \(c\alpha_i y_i\). I assume the cost of fighting to be the same for all kinds of fighting, 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 cost of intergroup fighting in which 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 candidate \(i\) winning in a fight is \(q_i\) where \(0 < q_i < 1\) and \(\sum_i q_i = 1\).

\(^7\)Hence, there is an asymmetry in the model in the sense that candidates 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 \textit{separately} to implement their ideal policies while \(E\) is fighting both candidates to preserve the winning policy.
This is an extensive form game with perfect information and simultaneous moves (Osborne, 2004). The strategy profiles consist of the announced policy platforms \((\tau^P, r^P), (\tau^R, r^R), (\tau^E, r^E)\) of three candidates, their actions \((a^P, a^R, a^E)\) in the second stage following the elections in which these platforms compete, and also what each candidate would do off the equilibrium path following the elections if a candidate \(i\) deviates to a different platform (denoted by \(((\tau^i, r^i); (a^{P'}, a^{R'}, a^{E'})\)). Hence, the appropriate solution concept is subgame 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 each subgame. Second, given those actions, all players should prefer to offer the platform specified in the strategy profile on the equilibrium path.

4 Equilibrium

4.1 Post-Election Decisions

Before characterizing a set of SPE profiles of this game at which the identity-based policy is not implemented, I introduce three lemmas which simplify the rest of the analysis.

Lemma 1 (Equilibria of Post-Election Subgames). In all subgames following elections, there is an equilibrium where all groups fight.

The logic underlying this lemma is as follows: Given that the other two candidates fight to implement their ideal policy, and fighting is equally costly for the third candidate regardless of what purpose he fights for, the third candidate is also strictly better off fighting for his own ideal policy than preserving the elected platform unless the elected platform coincides with it. In that case, he is indifferent between fighting and accepting. Therefore, regardless of the election outcome, given that the other two candidates play fight, the third
candidate has no incentives to deviate from *fight* to *accept.*

To find out when a subgame after elections has an \((a, a, a)\) equilibrium, first note that the payoffs in the second stage are a function of the elected policy platform in the first stage. The following lemma presents the necessary and sufficient conditions on the elected tax rate under which the subgame following the electoral victory of a platform with no identity-based policy (denoted by \((\tau, r = 0)\)) has an \((a, a, a)\) equilibrium. The lemma follows from comparing each candidate’s payoffs under the elected platform to their payoffs under unilateral fighting, i.e. if they start a costly fight in order to implement their ideal policy pair against the other candidates who want to preserve the elected platform.

**Lemma 2.** In the subgames following the victory of \((\tau, r = 0)\), there exists an equilibrium in which all groups accept the result if and only if

\[
1 - \frac{c}{(1 - \alpha_E)(c + q_E(1 - c))} + \frac{q_E(D - K)}{y(1 - \alpha_E)(c + q_E(1 - c))} \leq \tau \leq \frac{c}{(\alpha_R - 1)(c + q_R(1 - c))},
\]

Since both poor and the minority have market incomes below the average, their payoffs increase in the tax rate. Hence, they are better off accepting the elected platform \((\tau, 0)\) when others also accept it as long as the tax rate is above a minimum level so that the payoff from the elected platform exceeds their expected payoff from unilateral fighting. For the rich, the logic runs in the opposite direction. The higher the tax rate is, the lower the payoff of the rich becomes from accepting the election outcome. Hence, they are better off accepting than starting a unilateral fighting as long as the tax rate is below a certain level.

Note that the thresholds for each group are functions of exogenous parameters of market income share, costs of fighting, and likelihood of military victory. The thresholds for each group change with these exogenous parameters in the expected directions. For instance, as the market income share of the poor \((\alpha_P)\) or the minority \((\alpha_E)\) decreases, the minimum tax rates that these two groups accept increase. For the rich, higher market income share \((\alpha_R)\)

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\(^8\text{Henceforth, I will denote the actions of *accept* and *fight* with *a* and *f*, respectively.}\)
decreases the maximum tax rate they tolerate. Both of these comparative static results are in line with earlier models of democratic stability, in which higher inequality makes democratic compromise less likely (Przeworski 2005; Acemoglu and Robinson 2006). Also, note that the minimum tax rates tolerated by the poor and the minority decrease in the cost of fighting \( c \) while they increase in the probability of military victory \( q_P \) and \( q_E \) for the poor and the minority, respectively.

In the case of the minority, the threshold is also a function of mean income and the net benefit of the identity-based policy \( D - K \). Moreover, the minimum tax rate above which the minority is better off accepting the election results is less than 1 only if the mean income of the country is large enough so that the term \( \frac{q_E(D - K) - cy}{y(1 - \alpha_E)(c + q_E(1 - c))} \) is negative. This happens because the benefit of the identity-based policy is assumed to be independent of minority’s income, while the size of lump-sum transfers is a function of both the tax rate and the mean income in the country. Therefore, as the country becomes richer, the relative benefit of the identity-based policy becomes smaller than the benefit of lump-sum transfers at lower tax rates. Hence, as the country becomes richer, the minority prefers to accept election results over unilateral fighting at lower tax rates.

The lemmas 1 and 2 together imply that some of the subgames may have multiple equilibria: \((a, a, a)\) and \((f, f, f)\). In those cases, I will use Pareto-dominance as the selection criterion: If a subgame has two equilibria \((a, a, a)\) and \((f, f, f)\), players’ equilibrium action profile is such that compared to the action profile in the other equilibrium, at least one of them is strictly better off while the others are not worse off.

Under this selection criterion, suppose the candidate of the poor, \( P \), offers a platform \( (\tau^P < 1, r^P = 0) \), wins the elections and the subgame following the victory of \( (\tau^P, r^P = 0) \) has a Pareto-dominant \((a, a, a)\) equilibrium. Given that the configuration of platform offers \( (\tau^P, r^P = 0), (\tau^R, r^R), (\tau^E, r^E) \) makes \( (\tau^P, r^P = 0) \) win the elections, any policy pair with
a slightly higher tax rate and no identity-based policy, $(\tau^P + \epsilon, 0)$ would also beat $(\tau^R, r^R)$ and $(\tau^E, r^E)$ since at least those voters who vote for $(\tau^P, 0)$ would also vote for $(\tau^P + \epsilon, 0)$. Also, $(\tau^P + \epsilon, 0)$ makes the poor better off, so $P$ would have an incentive to offer $(\tau^P + \epsilon, 0)$, secure victory by the votes of those who prefer $(\tau^P + \epsilon, 0)$ over $(\tau^R, r^R)$, and $(\tau^E, r^E)$, and increase his payoff if the equilibrium of the subgame following the victory of $(\tau^P + \epsilon, 0)$ is $(a, a, a)$. Therefore, $P$ would not prefer deviating to $(\tau^P + \epsilon, 0)$ only if the equilibrium of the subgames following the victory of $(\tau^P + \epsilon, 0)$ is $(f, f, f)$, and $P$ is worse off under inter-group fighting. This observation is summarized in the following Lemma.

**Lemma 3.** Profiles in which on the equilibrium path players choose $(\tau^P < 1, r^P = 0), (\tau^R, r^R), (\tau^E, r^E); (a, a, a)$, and $(\tau^P < 1, r^P = 0) \text{ wins, are SPE only if the equilibrium of subgames following the victory of } (\tau^P + \epsilon, r = 0) \text{ is } (f, f, f)$.

The lemma below says that if the subgame after the victory of a platform $(\tau, 0)$ has a Pareto-dominant $(a, a, a)$ equilibrium, the subgame following the victory of $(\tau + \epsilon, 0)$ does not have a Pareto-dominant $(a, a, a)$ equilibrium only if $\tau$ is the maximum possible tax rate tolerated by the rich, and for any tax rate above that, $R$ is better off starting a fight against the winning platform.

**Lemma 4 (Equilibrium Tax Rate).** The subgame following the victory of $(\tau < 1, 0)$ has a Pareto-dominant $(a,a,a)$ equilibrium such that for any $\epsilon > 0$, the subgames following the victory of $(\tau + \epsilon, 0)$ have no Pareto-dominant $(a,a,a)$ equilibrium only if $\tau = \overline{\tau}_R$.

As I showed in Lemma 2, the maximum tax rate $\overline{\tau}_R = \frac{c\alpha_R}{(\alpha_R - 1)(c + q_R(1 - c))}$ tolerated by the rich is a function of their market income share $\alpha_R$, costs of fighting $c$ and their chances of winning a fight, $q_R$. Therefore, in sub-game perfect equilibria in which on the equilibrium path, we observe $(\tau^W = \overline{\tau}_R, r^W = 0)$ followed by $(a, a, a)$, equilibrium tax rate can be expressed as a function of $\alpha_R, c$ and $q_R$. Unsurprisingly, this tax rate decreases in market income share of the rich $\alpha_R$ and in their chances of winning a fight $q_R$, while it increases.
in the costs of fighting $c$. Hence, Lemma 4 also helps us to distinguish between different equilibrium tax rates depending on the values of these exogenous parameters.

### 4.2 Democratic Stability Equilibria without the Identity-Based Policy

In this section, I prove that this game has equilibria in which candidate of the poor offers a high redistribution platform, candidate of the rich offers a low redistribution platform, and the minority candidate offers a platform that advocates the adoption of the identity-based policy. In these equilibria, the platform offered by the candidate of the poor wins elections, no identity-based policy is adopted, and all candidates including the minority candidate accept the election results. There is a number of profiles which fit this description since I have not specified players’ action off the equilibrium path. The proposition below states the necessary and sufficient conditions under which a subset of the profiles that fit this description are SPE. I call these profiles democratic stability equilibria without the identity-based policy.

**Proposition 1.** There exist profiles in which on the equilibrium path $(\tau^P < 1, r^P = 0), (0 \leq \tau^R < \tau^P, r^R = 0), (\tau^E \leq 1, r^E = 1); (a, a, a)$ that are SPE if and only if $c < c^* < c^*$ and $y \geq \max\{y_1, y_2\}$. In these equilibria, $\tau^P = \tau^R$ and $P$ wins elections.

The logic of the conditions on the exogenous parameters in the proposition are as follows: First, the costs of fighting $c$ are not too high so that if a tax rate above the equilibrium tax rate is elected, the rich are willing to respond by fighting. Second, the costs of fighting are not too low so that the maximum tax rate that the rich tolerate are better than the minimum rate that the poor prefer over a costly fight to implement their ideal tax rate. The first lower threshold on mean income ensures that what the minority receives in the form of lump-sum transfers is large enough for them to accept the election outcome and not start a unilateral fighting. The second lower threshold is the income level above which lump-sum transfers
are also sufficient to make the minority better off under the elected platform compared to inter-group fighting. We know that the amount of lump-sum transfers is a function of the tax rate and the mean income in the country. Therefore, given the equilibrium tax rate of $\bar{\tau}_R$, the amount of lump-sum transfers necessary to keep the minority peaceful are reached only above a certain mean income level. It is worth noting that the conditions on the parameters in Proposition 1 are very much in line with the earlier results regarding the stability of democratic regimes (Acemoğlu and Robinson 2006). The rich tolerates tax rates only to a certain level, and above that level, they are better of turning against democracy while the poor also accept democratic electoral outcome as long as it ensures a minimum amount of redistribution (Przeworski 2005).

There is a further implication of the fact that the equilibrium tax rate is the maximum tax rate tolerated by the rich (which is denoted by $\bar{\tau}_R$) in the absence of the identity-based policy. We know that since the identity-based policy is costly, the rich prefer policy pairs which include the identity-based policy over pairs with no identity-based policy only if the tax rate offered with the identity-based policy is lower. Therefore, when the identity-based policy is also part of the elected platform, the maximum tax rate tolerated by the rich is lower than the rate when the identity-based policy is not part of the elected platform. We also know that the poor prefer policy pairs which include the identity-based policy over pairs with no identity-based policy only if the tax rate offered with the identity-based policy is higher. Therefore, if the minority candidate offers a higher tax rate along with the identity-based policy than the equilibrium rate in order to win the votes of the minority and the poor, this leads to inter-group fighting. This happens because the tax rate that makes the poor voters vote for the minority candidate’s offer over the equilibrium rate are higher than the maximum tax rate that is tolerated by the rich in the presence of the identity-based policy. In the set of equilibria I focus on in Proposition 1, accepting the elected tax rate without the identity-based policy makes the minority better off relative to inter-group
fighting. Therefore, the minority candidate has no incentives to change the identity-based policy decision democratically by offering a tax rate with the identity-based policy that would appeal to the poor voters more than the platform offered by their own candidate.

Finally, which one of the two lower income thresholds \((y_1, y_2)\) is larger in equilibrium depends on the costs of fighting \(c\). The key feature of the game that underlies this relation is as follows: Since both the poor and the minority have incomes below the mean, they both have the ideal tax rate of 100 percent. Therefore, minority’s expected payoff from inter-group fighting \((U_E(f, f, f))\) (where both the minority and the poor fight to set the tax rate to 100 percent) can be larger than their expected payoff from unilateral fighting \((U_E(a, a, f))\) (where only the minority fights to set the tax rate to 100 percent) if costs of fighting are not too high.

Because of this, for a range of values of the costs of fighting, the threshold mean income level \(y_2\) below which the minority is better off under inter-group fighting is the decisive threshold. The corollary below highlights the critical value \(\hat{c}\), below which \(y_2\) is greater than \(y_1\). It also presents the result that below this critical value, for a range of market income share values of the rich \((\alpha_R)\), this lower threshold \(y_2\) increases in the market income share \(\alpha_E\) of the minority.

**Corollary 1.** When \(\alpha_E > \hat{\alpha}_E\), \(\max\{y_1, y_2\} = y_2\) if \(c < \hat{c} < \bar{c}\). \(y_2\) increases in \(\alpha_E\) when \(\alpha_R < \hat{\alpha}_R\).

The logic underlying the corollary is the following: There are two different types of costs associated with inter-group fighting: First, it causes partial destruction of a group’s market income. Second, in the aftermath of a fight, the winner adopts his ideal redistribution policies that inflict additional costs on the loser of the fight. If the rich win, they adopt a tax rate of zero, which hurts the poor and the minority. If the poor win or the minority
wins, they adopt a tax rate of one, which hurts the rich.\footnote{The logic of the argument does not depend on the assumptions of full and zero redistribution following the military victory of the poor and the rich, respectively.} Given these two different types of costs, as $\alpha_E$ increases, i.e. as the market income of the minority improves, they face two different incentives, which push them in opposite directions regarding their willingness to initiate an inter-group fighting in a democracy that is irresponsible to their identity-based political demands. First, since fighting causes partial destruction of income, with higher market income under democracy, they have more to lose from costly conflict, which makes them less willing to start a fight. Second, groups with higher income are less dependent on income redistribution. Therefore, as minority’s income increases, the prospect of zero redistribution following military victory of the rich becomes less effective as a threat, and this makes the minority more willing to initiate a fight.

The joint effect of these incentives on the minority’s decision to initiate a fight depends on the initial rate of redistribution in democracy. If there is low redistribution, the effect of the costs of fighting dominates the effect of the threat of zero redistribution, and therefore, higher market income has a net positive effect on minority’s attachment to democracy. Hence, with low redistribution, the willingness of the minority to initiate a fight becomes weaker with higher market income. However, if there is high redistribution, then the effect of the threat of zero redistribution dominates the effect of the costs of fighting, and therefore, higher market income has a net negative effect on minority’s attachment to democracy. In this case, the first incentive remains weak and the second incentive dominates the first.

In the equilibria I analyze here, the elected tax rate is the maximum tax rate tolerated by the rich ($\tau_R$), and as Lemma 4 and the subsequent discussion show, this tax rate decreases on market income share $\alpha_R$ of the rich. Therefore, as long as the market income of the rich is not too high ($\alpha_R < \hat{\alpha}_R$), equilibrium tax rate is high enough so that the latter incentive dominates the former in equilibrium. Consequently, when members of the minority have
higher market income, minority candidate has stronger incentives to initiate a fight on behalf of his ethnic identity-based demands, which is reflected in an increase in $y_2$. If market income of the rich is high, $(\alpha_R > \hat{\alpha}_R)$, then the equilibrium tax rate is sufficiently low so that an increase in market income weakens minority incentives to resort to violence, which is reflected in a decrease in $y_2$.

Finally, the corollary also specifies that the latter incentive can become dominant in equilibrium only if the market income share of the minority is not too low $(\alpha_E > \hat{\alpha}_E)$. We know that if there is an inter-group fighting and the rich win the fight, there is no redistribution and the minority is left with their market income minus the cost of fighting. Hence, if the minority income share is too low, in equilibrium, the prospect of the military victory of the rich in an inter-group fighting becomes too costly. In that case, the absolute amount of redistribution, which is sufficient to prevent the minority from starting a unilateral fight, is also always sufficient to prevent them from starting an inter-group fighting, as a result of which the rich may become victorious and implement a tax rate of 0 percent.

This discussion of the relationship between the lower income threshold $(y_\downarrow)$ and the income share of the minority $(\alpha_E)$ is summarized in Figure 2. The figure shows the direction of the change in the lower threshold on mean income $(y_\downarrow)$ for different values of $\alpha_E$ in equilibrium. If $\alpha_E$ is less than $\hat{\alpha}_E$, this threshold is equal to $y_\downarrow$, which is the mean income level above which the minority is better off under the elected policy pair than starting a unilateral fighting. For values of $\alpha_E$ above $\hat{\alpha}_E$, the lower income threshold is equal to $y_\uparrow$, which is the mean income level above which the minority is better off under the elected policy pair than starting an inter-group fighting. If $\alpha_E < \hat{\alpha}_E$, with higher market income, the minority becomes better off accepting the election outcome at a lower mean income level so $y_\downarrow$ decreases with higher $\alpha_E$. If $\alpha_E > \hat{\alpha}_E$, with higher market income, the minority is still better off accepting the election outcome at a lower mean income level if the income share of the rich is sufficiently high $(\alpha_R > \hat{\alpha}_R)$ so that the equilibrium tax rate is low. However, if
the income share of the rich is sufficiently low \((\alpha_R < \hat{\alpha}_R)\) so that the equilibrium tax rate is high, with higher market income, the minority is better off accepting the election outcome at a higher mean income level, which is reflected in an increase in \(y\).

[Figure 2 about here.]

One of the key empirical implications of this result is as follows: Suppose there are two different countries with the same mean income and the same tax rate. Suppose also that there is a minority in each country with ethnic grievances. In the first one, market income inequality is high so that the minority is considerably poorer than the average citizen. Let’s call this minority “very poor”. In the second one, inequality is lower and the minority income is closer to mean income. Let’s call this minority “poor”. Suppose also that the tax rate is low in both countries. Then, democratic stability equilibria with no identity-based policy may exist in the country with a poor minority but not in the country with a very poor minority. This is because the minimum mean income necessary for stability \((y)\) for the country with a very poor minority may be higher than the mean income of these countries. Now, suppose that the tax rate is the same but high in both countries. In that case, between the two countries with the same mean income, democratic stability equilibria with no identity-based policy may exist in the country with the very poor minority but not in the country with the poor minority. This is because this time, the minimum mean income necessary for stability in the country with the poor minority may be higher than the mean income of these countries.

Table 1 summarizes these empirical implications of the corollary highlighted above.

[Table 1 about here.]
An alternative and loose interpretation of the corollary is the following: Suppose there are two minority groups in one country both with ethnic grievances. One is poor and the other one is very poor in the same sense as in the example above. Then, which one of these two groups has stronger incentives to resort to violence depends on the tax rate. If tax rate is low, the very poor minority is more likely to initiate violence than the poor minority. If tax rate is high, the poor minority is more likely to initiate violence than the very poor minority.

A methodologically rigorous testing of these empirical implications requires statistical analysis. However, since the purpose of this paper is theoretical, in the next section, I present suggestive qualitative and quantitative evidence that is consistent with these empirical implications of my theoretical result. My evidence comes from Western Balkans, which is a geographic region with significant ethnic diversity and a number of groups with ethnic grievances. The region includes Serbia, Croatia, Bosnia and Herzegovina, Albania, Macedonia, Kosovo and Montenegro, a region which has been affected by ethnic violence at a very high scale in the first half of 1990s during the breakup of Yugoslavia.\textsuperscript{10} The evidence highlights cases where inter-group violence has occurred either when redistribution rate is relatively high and the minority that initiates the violence is economically relatively close to the national average, or when redistribution rate is relatively low and the minority that initiates the violence is economically far from the national average. The qualitative evidence of the next section relies heavily on group chronologies at Minorities at Risk Project (MAR) (2009), which tracks 283 ethnic groups that have “political significance”.\textsuperscript{11} My quantitative evidence on group incomes comes from the ethnic group income data of Cederman et al. (2011) who use geocoded data on distribution of ethnic groups and spatial wealth estimates

\textsuperscript{10}For a detailed account of the break-up, see Woodward (1995).

\textsuperscript{11}MAR defines political significance by whether the group suffers or benefits from discriminatory treatment vis-a-vis other groups in society or the group is the basis for political mobilization and collective action in defense or promotion of its self-defined interests (MAR, 2009).
of countries around the world to estimate ethnic group incomes relative to the rest of the population.

5 Evidence

5.1 Low Redistribution: Minorities in Albania and Macedonia

My evidence for group behavior in the case of low redistribution comes from a comparison of Albania and Macedonia. As of 2010, both countries had similar levels of economic development. In 2010, GDP/cap in Albania was 6617 dollars\textsuperscript{12} while Macedonian GDP/cap in 2010 was 7628 dollars. According to reports of World Bank as well as data from the International Labor Organization (ILO), in the last decade, in both countries, public expenditure has been low, and only a narrow range of public services were provided relative to the rest of the countries in the Western Balkans (Bartlett and Xhumari, 2007). For instance, total public expenditure on social protection\textsuperscript{13} as a percentage of GDP in Albania and Macedonia were only 10 and 12 %, respectively, while the same figures in Croatia and Bosnia and Herzegovina are 26.5 % and 21.4 %, respectively (Bartlett and Xhumari, 2007: 304).

Macedonia has an Albanian minority which lives mostly in the northwestern part of the country. Their language is Albanian, which differs from the majority language of Macedonian, and Albanians practice Islam while the Macedonians are Eastern Orthodox. To give a brief history of the conflict between the Albanians and Macedonians, after Macedonia became independent in 1991, the Albanian minority started to demand more cultural and political rights and organized a referendum on autonomy in 1992. Reportedly, an overwhelming majority voted in favor of the autonomy (MAR, 2009). However, the Macedonian government

\textsuperscript{12}All GDP/cap values in this section use PPP Converted GDP Per Capita (Chain Series) international dollar values at 2005 constant prices from Penn World Table, version 7.1.

\textsuperscript{13}Social protection includes all social transfers including pensions as well as expenditure on healthcare.
refused to validate these results. In response, tens of thousands of Albanians demonstrated in the Macedonian capital Skopje and demanded that Macedonia should remain unrecognized by the international community until the state grants ethnic Albanians the right to autonomy in regions where Albanians make up the majority. In 1994, the opening of an Albanian language university was declared illegal. The ethnic tensions have continued in the latter half of 1990s. At the beginning of 2001, the tension turned into organized political violence. An ethnic Albanian insurgency demanding greater political and cultural rights for the Albanian minority began launching attacks on government forces. The clashes continued until a ceasefire agreement was reached in the second half of 2001. After the ceasefire, in August 2001, Macedonian and Albanian political leaders signed the Ohrid Framework Agreement, bringing the fighting to an end. In November 2001, the Macedonian parliament adopted constitutional changes giving the ethnic Albanians greater civil rights and also giving Albanian more official use (Wood 2001). Currently, Albanian is a co-official language in Macedonia.

In Albania, the largest minority group and the group with political demands is the Greek minority, which is a linguistically and religiously distinct minority. After a period of minor clashes in early 1990s motivated by cultural discrimination against Greeks, in 1997, the Albanian government committed itself to providing Greeks with the right for education in their own language (MAR, 2009). More recently, due to informal restrictions on education in Greek, the group has been demanding the opening of new Greek language classes in cities with a large proportion of Greek population. However, there has been no large-scale insurgent violence initiated by the Greeks in Albania to bring about the changes in 1997. There were also no major acts of violence in the aftermath of these changes when Greeks had further demands (MAR 2009; Cederman et al. 2011).

The behavior of both groups are consistent with the empirical implication of the model: Both Albania and Macedonia had low redistribution rates. Both had minorities with ethnic
grievances. However, it is the Albanians in Macedonia who resorted to violence. According to the group-level data of Cederman et al. (2011), the ratio of Albanians’ income to the mean income in Macedonia was .77, while the same ratio for the Greeks in Albania is .98. Hence, the available evidence suggests that in two countries with similar levels of economic development and low level of redistribution, the poorer minority relative to the rest of the country (Albanians in Macedonia) has resorted to violence while the minority with an income closer to national average (Greeks in Albania) has not.

5.2 High Redistribution: Two Minorities in Serbia

To highlight how minority incentives for violence may be affected when redistribution level is high, I compare two groups in Serbia: The Kosovar Albanian minority and the Hungarian minority in the Vojvodina region. The Kosovar Albanians have their own language and they are also Muslims. The Hungarians also have their own language and are Roman Catholic as opposed to the Christian Orthodox Serbs. First, it must be noted that compared to the rest of the countries in the region, total government expenditure as a percentage of GDP was among the highest in Serbia. For instance, in 2006, this figure was 42.1% while total government expenditure as a percentage of GDP in Albania and Macedonia were 28.4 and 34.1%, respectively. Total public expenditure on social protection as a percentage of GDP in Serbia was 20.9, while, as noted above, the corresponding figures for Albania and Macedonia were 10 and 12%, respectively. Hence, in the region, Serbia clearly exhibits relatively higher levels of redistribution.

To recap the recent history of these two groups in Serbia, first, in 1989, before the breakup of Yugoslavia, Kosovo’s status as an autonomous province of Serbia was revoked. In response to this, Kosovar Albanians held a referendum that declared Kosovo independent. In early 1990s, Serbian government carried out repressive measures against the Albanians.
In response to these measures, Albanians first reacted by non-violent resistance but eventually created the Kosovo Liberation Army (KLA) and launched an insurgency. Serbian forces conducted a brutal counterinsurgency campaign against KLA, and they were forced to withdraw only after the three-month long NATO military operation in 1999. After a period of transitional administration in the area, in 2008, Kosovo Assembly declared Kosovo independent. Since then, over 85 countries have recognized Kosovo (CIA World Factbook 2012).

If we look at the recent history of Hungarians in Serbia, similar to the fate of Albanians in late 1980s, the autonomy of Hungarians in the region of Vojvodina was also revoked. Much of Hungary’s autonomy was restored in 2002 but most of that was curtailed again in 2006 (MAR, 2009). Despite being repressed by the Serbian government between 1989-2000, and despite the current restrictions on their political autonomy, there has not been large-scale violence initiated by the Hungarians against the Serbs (Cederman et al. 2011).

The behavior of both the Kosovar Albanians and the Hungarians in Vojvodina are also consistent with the empirical implications of the model: When we look at the income of Kosovar Albanians in Serbia as a percentage of mean income, it is 47% while Hungarians’ income as a percentage of mean income is 41%. Hence, among two poor minorities with ethnic grievances in a country with high level of redistribution, the group whose income is closer to national average (Kosovar Albanians) has resorted to violence. This evidence is also consistent with the empirical implications of the theory.

6 Conclusion

I present a model of electoral competition to analyze how income inequality affects stability of democracies when groups have conflicting preferences both over income redistribution and an ethnic identity-based policy. In contrast to my model, recent theoretical studies on
democratic consolidation focus exclusively on conflict over income redistribution, and as a result of this focus, they invariably claim that higher income inequality makes democracies less stable by increasing the intensity of redistributive conflict. In these models, the threat to democratic stability comes from the poor or the rich in the form of coups or revolutions that enable groups to implement their ideal redistribution policies (Przeworski, 2005; Acemoglu and Robinson, 2006).

Instead, I focus on the incentives of a poor minority group with ethnic grievances to initiate a fight in a democracy, and show that these incentives may be stronger if minority income is closer to national average. The reason for this result is that, if one of the possible consequences of resorting to violence is a significant reduction in redistribution, then the prospect of losing redistribution becomes less costly for the minority as its income level improves. The less poor the minority is, the less dependent they are on redistribution, and hence the less afraid they are to lose it as a result of starting a fight. The theoretical implication of this result is that when we take the presence of ethnic divisions among the poor into account, the relationship between income inequality and the likelihood of democratic stability changes, and lower income inequality makes democracies less stable if it is accompanied by high levels of redistribution.

Empirically, this result indicates that highly redistributive democracies may be more likely to suffer from insurgencies launched by a minority group with ethnic grievances if the income of the group is closer to mean income. Moreover, in highly redistributive democracies with multiple poor groups having ethnic grievances, the groups with higher income may be more likely to resort to violence. I also present some limited evidence from Western Balkans that is consistent with these empirical implications of the model.
Proof (Lemma 1): I denote the actions accept and fight by the letters a and f.

I start with player 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 \( U_P(a, f, f) = q_P [U_P(\tau, r | fight)] + q_R \alpha_P y (1 - c) + q_E [y (1 - c) - K] \) where \( U_P(\tau, r | fight) \) 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 \( U_P(\tau, r | fight) \leq y (1 - c) \) since \( U_P(\tau, r = 0 | fight) = (1 - \tau) \alpha_P y (1 - c) + \tau y (1 - c) \) and \( U_P(\tau, r = 1 | fight) = (1 - \tau) \alpha_P y (1 - c) + \tau y (1 - c) - K \) both of which are increasing in \( \tau \) and hence reach their maximum when \( \tau = 1 \). 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 \( (\tau = 1, r = 0) \). 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 \( (\tau = 0, r = 0) \) 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 \( (\tau = 1, r = 1) \). Therefore, in all sub-games following elections, there is a \( (f, f, f) \) equilibrium.

\[
\begin{align*}
\text{Proof (Lemma 2): } & P \text{ accepts } (\tau, 0) \text{ when } R \text{ and } E \text{ accept it if } U_P(\tau, 0) = (1 - \tau) \alpha_P y + \tau y \geq U_P((\tau, 0); (f, a, a)) = q_P y (1 - c) + (1 - q_P) ([1 - \tau](1 - c) \alpha_P y + \tau y (1 - c)) \text{ which is equivalent to } \\
& \tau \geq 1 - \frac{c}{(1 - \alpha_P)(c + q_P (1 - c))} = \tau_P. \text{ R accepts } (\tau, 0) \text{ when } P \text{ and } E \text{ accept it if } U_R(\tau, 0) = (1 - \tau) \alpha_R y + \tau y \geq U_R((\tau, 0); (a, f, a)) = q_R \alpha_R y (1 - c) + (1 - q_R) ([1 - \tau](1 - c) \alpha_R y + \tau y (1 - c)) \text{ which is equivalent to } \\
& \tau \leq \frac{c \alpha_R}{(\alpha_R - 1)(c + q_R (1 - c))} = \tau_R. \\
\text{E accepts } (\tau, 0) \text{ when } P \text{ and } R \text{ accept it if } U_E((\tau, 0)) = (1 - \tau) \alpha_E y + \tau y \geq U_E((\tau, 0); (a, a, f)) = \tau_E. \text{ which is equivalent to } \\
& \tau \geq 1 + \frac{q_E (D - K) - cy}{y (1 - \alpha_E)(c + q_E (1 - c))} = \tau_E. \\
\text{Hence, in the subgame following the electoral victory of } (\tau, r = 0), \text{ there exists an } (a, a, a) \text{ equilibrium if and only if } max\{\tau_P, \tau_E\} \leq \tau \leq \tau_R. \quad \blacksquare
\end{align*}
\]
Proof (Lemma 3): First, note that \((\tau^P < 1, r^P = 0)\) wins the elections only if \((\tau^R, r^R)\) and \((\tau^E, r^E)\) do not make the poor voters better off relative to \((\tau^P < 1, r^P = 0)\). This is because, if another candidate offers such a platform, both poor and minority voters would vote for it, and a platform that receives no votes from the poor and the minority cannot win elections because the size of the poor and the minority are both larger than the rich.

Second, note that there are three cases in which \((\tau^P < 1, r^P = 0)\) beats \((\tau^R, r^R)\) and \((\tau^E, r^E)\), depending on where the platforms of \((\tau^R, r^R)\) and \((\tau^E, r^E)\) are located on the policy space.

Case 1: The platforms of the other two candidates are on \(r = 0\) such that \(\tau^R < \tau^P, \tau^E < \tau^P\). This implies that both the poor and the minority vote for \((\tau^P < 1, r^P = 0)\). Then, both groups would also vote for \((\tau^P + \epsilon < 1, r^P = 0)\).

Case 2: The platforms of the other two candidates are on \(r = 1\). There are two such subcases depending on whether the two platforms overlap.

Case 2a: Two platforms overlap. There are four subcases depending on who votes for the overlapping platforms.

Case 2aa: Neither the minority nor the rich votes for the overlapping platforms. Then, \((\tau^P + \epsilon < 1, r^P = 0)\) wins with the votes of the poor and the minority. Depending on the size of \(\epsilon\), either the rich also vote for \((\tau^P + \epsilon < 1, r^P = 0)\) or they vote for the overlapping platforms, or they split their votes between \((\tau^P + \epsilon < 1, r^P = 0)\) and the overlapping platforms.

Case 2ab: The minority votes for the overlapping platforms. Then, depending on the size of \(\epsilon\), \((\tau^P + \epsilon < 1, r^P = 0)\) wins either with the votes of the poor and the rich, the votes of the poor and the minority, or only the votes of the poor, and the votes of the rich and the minority are split between the overlapping platforms.

Case 2ac: The minority doesn’t vote for the overlapping platforms but the rich do.
\((\tau^P + \epsilon < 1, r^P = 0)\) wins with the votes of the poor and the minority.

Case 2ad: Both the minority and the rich vote for the overlapping platforms. Depending on the size of \(\epsilon\), \((\tau^P + \epsilon < 1, r^P = 0)\) wins only with the votes of the poor or with the votes of the poor and the minority.

Case 2b: Two platforms don’t overlap. In this case, note that the minority may only vote for the platform with the higher tax rate, and the rich may only vote for the one with the lower tax rate. In light of this, there are four subcases.

Case 2ba: The minority votes for the one with the higher tax rate, and the rich vote for the one with the lower tax rate. Depending on the size of \(\epsilon\), \((\tau^P + \epsilon < 1, r^P = 0)\) wins with the votes of the poor or the votes of the poor and the minority.

Case 2bb: The minority votes for \((\tau^P, r^P = 0)\), and the rich vote for the platform on \(r = 1\) that has the lower tax rate relative to the other platform on \(r = 1\). \((\tau^P + \epsilon < 1, r^P = 0)\) wins with the votes of the poor and the minority.

Case 2bc: The minority votes for the platform with \(r = 1\) that has the higher tax rate relative to the other platform on \(r = 1\), and the rich vote for \((\tau^P, r^P = 0)\). Depending on the size of \(\epsilon\), \((\tau^P + \epsilon < 1, r^P = 0)\) wins with the votes of the poor, or with the votes of the poor and the rich, or the votes of the poor and the minority or the votes of the poor, the minority, and the rich.

Case 2bd: Both the minority and the rich vote for \((\tau^P, r^P = 0)\). Then, depending on the size of \(\epsilon\), \((\tau^P + \epsilon, r^P = 0)\) wins with the votes of the poor and the minority or with the votes of the poor, the rich and the minority.

Case 3: The platform of one candidate is on \(r = 0\), the platform of the other candidate is on \(r = 1\). Note that in this case, if \((\tau^P, r^P = 0)\) wins, this implies that either only the minority votes for the platform on \(r = 1\), or the rich vote for the platform on \(r = 1\) or neither the minority nor the rich vote for the platform on \(r = 1\). There are three cases.
Case 3a: The minority votes for the platform on \( r = 1 \). Then, depending on the size of \( \epsilon \), \((\tau^P + \epsilon, r^P = 0)\) wins by the votes of the poor or by the votes of the poor and the minority.

Case 3b: The rich vote for the platform on \( r = 1 \). \((\tau^P + \epsilon, r^P = 0)\) wins with the votes of the poor and the minority.

Case 3c: Neither the minority nor the rich vote for the platform on \( r = 1 \). \((\tau^P + \epsilon, r^P = 0)\) wins with the votes of the poor and the minority.

So, in each case, if the platform offers are such that \((\tau^P < 1, r^P = 0)\) beats \((\tau^R, r^R)\) and \((\tau^E, r^E)\), then \((\tau^P + \epsilon, r^P = 0)\) also beats \((\tau^R, r^R)\) and \((\tau^E, r^E)\). If the equilibrium of the subgame following the victory of \((\tau^P + \epsilon, r^P = 0)\) is \((a,a,a)\), \(P\) has an incentive to deviate to \((\tau^P + \epsilon, r^P = 0)\) since \(U_P(\tau,0)\) is increasing in \(\tau\). This implies that profiles in which on the equilibrium path players choose \((\tau^P < 1, r^P = 0)\), \((\tau^R, r^R), (\tau^E, r^E); (a,a,a)\), and \((\tau^P < 1, r^P = 0)\) wins, are SPE only if the equilibrium of subgames following the victory of \((\tau^P + \epsilon, 0)\) is \((f,f,f)\).

\[
\square
\]

**Proof (Lemma 4):** First, note that \(U_E((\tau,0); (a,a,a)) = (1-\tau)\alpha_Ey+\tau y \geq U_E(f,f,f) = q_P(1-c)y + q_R\alpha_Ey(1-c) + q_E(y(1-c) - K + D)\) which is equivalent to \(\tau \geq 1 - q_R(1-c) - \frac{c}{1-\alpha_E} + \frac{q_E(D-K)}{y(1-\alpha_E)} = \tau_J^E\). Similarly, \(U_P((\tau,0); (a,a,a)) = (1-\tau)\alpha_Py + \tau y \geq U_P(f,f,f) = q_P(1-c)y + q_R\alpha_Py(1-c) + q_E(y(1-c) - K)\) which is equivalent to \(\tau \geq 1 - q_R(1-c) - \frac{c}{1-\alpha_P} + \frac{q_EK}{y(1-\alpha_P)} = \tau_J^P\). Finally, \(U_R((\tau,0); (a,a,a)) = (1-\tau)\alpha_Ry + \tau y \geq U_R(f,f,f) = q_P(1-c)y + q_R\alpha_Ry(1-c) + q_E(y(1-c) - K)\) which is equivalent to \(\tau \leq 1 - q_R(1-c) - \frac{c}{\alpha_R - 1} + \frac{q_EK}{y(\alpha_R - 1)} = \tau_J^R\). It is easy to see that \(\frac{dU_R(\tau,0)}{d\tau} < 0\) and \(\frac{dU_E(\tau,0)}{d\tau} > 0\) and \(\frac{dU_P(\tau,0)}{d\tau} > 0\). Now, suppose \(\tau^W < \tau^R\). Then, if \(\tau^W\) is followed by a Pareto-dominant \((a,a,a)\) equilibrium, it must be the case that \(\tau^W \geq \tau_J^E, \tau^W \geq \tau_J^P, \tau^W \geq \tau_J^E\) and \(\tau^W \geq \tau_J^P\). This...
implies that there must exist an $\epsilon > 0$ such that $U_E((\tau^W + \epsilon, 0); (a, a, a)) > U_E(f, f, f)$, $U_P((\tau^W + \epsilon, 0); (a, a, a)) > U_P(f, f, f)$, $U_R((\tau^W + \epsilon, 0); (a, a, a)) > U_R(f, f, f)$, $U_P((\tau^W + \epsilon, 0); (a, a, a)) > U_P((\tau^W + \epsilon, 0); (a, a, a)) > U_R((\tau^W + \epsilon, 0); (a, a, a))$ and $U_E((\tau^W + \epsilon, 0); (a, a, a)) > U_E((\tau + \epsilon, 0); (a, a, f))$. But these conditions imply that the subgame following the victory of $(\tau^W + \epsilon, 0)$ has a Pareto-dominant $(a, a, a)$ equilibrium, which leads to a contradiction. Now, suppose $\tau > \bar{\tau}$, then $(\tau, 0)$ has no $(a, a, a)$ equilibrium, which also leads to a contradiction.

**Proof (Proposition 1):** First, note that the rich prefer $(\tau^E, 1)$ over $(\tau^P, 0)$ if and only if $U_R(\tau^E, 1) > U_R(\tau^P, 0)$ which is equivalent to $\tau^E < \tau^P - \frac{K}{\alpha_R - 1} = f(\tau^P)$. Poor vote for $(\tau^P, 0)$ over $(\tau^E, 1)$ if and only if $\tau^E < \tau^P + \frac{K}{\alpha_R - 1} = g(\tau^P)$. Also, note that if $\tau^R < \frac{K}{y} \frac{\alpha_R}{\alpha_R - 1}$, rich vote for $(\tau^R, r^R = 0)$ over $(\tau^E, 1) \forall \tau^E \geq \frac{K}{y}$.

Hence, there must exist a set of platform offers in which $(\tau^P < 1, r^P = 0)$, $(\tau^R < min\{\tau^P, \frac{K}{y} \frac{\alpha_R}{\alpha_R - 1}\}, r^R = 0)$ and $(\tau^E \in (f(\tau^P), g(\tau^P)), r^E = 1)$ such that $W = P$.

Note that if $(a, a, a)$ is the Pareto-dominant equilibrium in the subgame following the election of $(\tau^P, 0)$, players would not have an incentive to deviate to a point which changes the election outcome to a platform followed by a subgame with a $(f, f, f)$ equilibrium. Second, note that a player $i$ would have incentives to deviate to $(\tau^i, r^i)$ if either a) $(\tau^i, r^i)$ is the new winner, $U_i(\tau^i, r^i) > U_i(\tau^P, 0)$, and equilibrium of the subgame following the victory of $(\tau^i, r^i)$ is $(a, a, a)$ or b) $(\tau^i, r^i)$ changes the winner to a pair $(\tau^j, r^j)$ such that $U_i(\tau^j, r^j) > U_i(\tau^P, 0)$, and the equilibrium following the victory of $(\tau^j, r^j)$ is $(a, a, a)$. I will call these cases Type 1 and Type 2 incentives to deviate, respectively.

Then, it immediately follows from Lemma 4 that a profile in which on the equilibrium path players offer $(\tau^P < 1, r^P = 0)$, $(\tau^R < min\{\tau^P, \frac{K}{y} \frac{\alpha_R}{\alpha_R - 1}\}, r^R = 0)$ and $(\tau^E \in (f(\tau^P), g(\tau^P)), r^E = 1)$, and after elections, they play $(a, a, a)$ is SPE only if $\tau^P = \bar{\tau}$ since for any other value of $\tau^P$, either the subgame following the victory of $(\tau^P, r^P = 0)$ has
no \((a,a,a)\) equilibrium or \(P\) and \(E\) have Type 1 incentives to deviate to \((\tau^{P'} > \tau^P, r^{P'} = 0)\) and \((\tau^{E'} > \tau^P, r^{E'} = 0)\), respectively.

Call \(f(\tau^P) = \tau_R\), and \(g(\tau^P) = \tau_R\). Note that \(\tau_R < 1\) if and only if
\[
c < \frac{q_R(\alpha_R - 1)}{1 + q_R(\alpha_R - 1)} = \bar{c}.
\]

We know that \(E\) accepts \((\tau, 0)\) when \(P\) and \(R\) accept it if \(\tau \geq \tau_E\). Then, the subgame after the victory of \((\tau_R, 0)\) has an \((a,a,a)\) equilibrium only if \(\tau_E \leq \tau_R\) which holds only if
\[
(a_R - 1)(c + q_R(1 - c))(c - (1 - \alpha_E)(c + q_E(1 - c))) + c\alpha_R(1 - \alpha_E)(c + q_E(1 - c)) > 0
\]
and
\[
y \geq \frac{q_E(D - K)(\alpha_R - 1)(c + q_R(1 - c))}{(\alpha_R - 1)(c + q_R(1 - c))(c - (1 - \alpha_E)(c + q_E(1 - c))) + c\alpha_R(1 - \alpha_E)(c + q_E(1 - c))} = \frac{\bar{y}}{2}.
\]
After a few steps of algebra, \((a_R - 1)(c + q_R(1 - c))(c - (1 - \alpha_E)(c + q_E(1 - c))) + c\alpha_R(1 - \alpha_E)(c + q_E(1 - c))\)
becomes
\[
[(\alpha_R - 1)(1 - q_R)(1 - (1 - \alpha_E)(1 - q_E)) + \alpha_R(1 - \alpha_E)(1 - q_E)]c^2 +
[(\alpha_R - 1)\alpha_E - (\alpha_R - 1)(1 - \alpha_E)q_E(1 - q_R) + (\alpha_R - 1)(q_R(1 - (1 - \alpha_E)(1 - q_E)))]c - (\alpha_R - 1)(1 - \alpha_E)q_Eq_R = m(c).
\]

In addition, it must also be true that \(\tau_P \leq \tau_R\), which after a few steps of algebra,
becomes
\[
0 < [(\alpha_R - 1)(1 - q_R)(1 - (1 - \alpha_P)(1 - q_P)) + \alpha_R(1 - \alpha_P)(1 - q_P)]c^2 + [(\alpha_R - 1)\alpha_P - (\alpha_R - 1)(1 - \alpha_P)q_P(1 - q_R) + (\alpha_R - 1)(q_P(1 - (1 - \alpha_P)(1 - q_P)))]c - (\alpha_R - 1)(1 - \alpha_P)q_Pq_R = n(c).
\]

To find the conditions under which the subgame following the victory of \((\tau_R, 0)\) has a
Pareto-dominant \((a,a,a)\), we know from the proof of Lemma 4 that \(U_E((\tau, 0); (a,a,a)) \geq U_E(f, f, f)\) when \(\tau \geq \tau_E\). Similarly, \(U_P((\tau, 0); (a,a,a)) \geq U_P(f, f, f)\) when \(\tau \geq \tau_P\). Finally,
\(U_R((\tau, 0); (a,a,a)) \geq U_R(f, f, f)\) when \(\tau \leq \tau_R\).

We know from the proof of Lemma 4 that \(\tau_R > \tau_R \forall (\tau, 0)\). Then, the subgame
following the victory of \((\tau_R, 0)\), has a Pareto-dominant \((a,a,a)\) equilibrium only if \(\tau_E \leq \tau_R\). Plugging in the expressions for these two threshold tax rates, this inequality holds if
and only if
\[
(\alpha_R - 1)(1 - q_R)(1 - q_R(1 - \alpha_E))c^2 + [q_R(\alpha_R - 1)(1 - q_R(1 - \alpha_E)) + \alpha_R(1 - \alpha_E) - (\alpha_R - 1)(1 - q_R)(1 - \alpha_E)]c - q_R(\alpha_R - 1)(1 - \alpha_E)(1 - q_R) = p(c) > 0
\]
and
\[
y \geq \frac{q_E(D - K)(\alpha_R - 1)(c + q_R(1 - c))}{c\alpha_R(1 - \alpha_E) + c(\alpha_R - 1)(c + q_R(1 - c)) - (\alpha_R - 1)(c + q_R(1 - c))(1 - \alpha_E)(1 - q_R(1 - c))} = \frac{\bar{y}}{2}.
\]
It is easy to see that
\[ \tau^f_R < \tau^f_E \] so when \( \tau^f_E \leq \tau_R \), it must be the case that \( \tau^f_P < \tau_R \).

Note that \( m(c), n(c), p(c) \) are quadratic functions which increase in \( c \) and have a negative intercept. Also, note that \( m(c = 1) > 0, n(c = 1) > 0, p(c = 1) > 0 \). Hence, there must be a \( \xi^1, \xi^2, \xi^3 \) such that \( m(c = \xi^1) = 0, m(c > \xi^1) > 0, n(c = \xi^2) = 0, n(c > \xi^2) > 0, \) and \( p(c = \xi^3) = 0, p(c > \xi^3) > 0, \) respectively. Plugging \( c = \bar{c} \) in \( m(c), n(c), p(c) \) shows that \( m(c = \bar{c}) > 0, n(c = \bar{c}) > 0 \) and \( p(c = \bar{c}) > 0 \). Hence, the subgame following the victory of \((\tau_R, 0)\) has a Pareto-dominant \((a, a, a)\) equilibrium if and only if \( \max\{\xi^1, \xi^2, \xi^3\} = \xi < c < \bar{c} \) and \( y \geq \max\{y_1, y_2\} \).

We also need to show that when the profiles on the equilibrium path are \((\tau^P = \tau_R, r^P = 0), (\tau^R < \min\{\tau_R, K y \alpha_R / (y \alpha_R - 1)\}, r^R = 0)\) and \((\tau^E \in (\hat{\tau}_{RV}, \hat{\tau}_{PV}), r^E = 1)\); \((a, a, a)\), no player has an incentive to deviate. First, note that \( R \) accepts \((\tau, 1)\) when \( P \) and \( E \) accept it if \( U_R(\tau, 1) = (1-\tau)\alpha_R y + \tau y - K \geq U_R((\tau, 1); (a, f, a)) = q_R\alpha_R y (1-c) + (1-q_R)[(1-\tau)(1-c)\alpha_R y + \tau y (1-c) - K]\) which is equivalent to \( \tau \leq \frac{c\alpha_R}{(\alpha_R - 1)(c + q_R(1-c))} - \frac{q_R K}{y(\alpha_R - 1)(c + q_R(1-c))} = \hat{\tau}^P \)

\[ \tau_R - \frac{q_R K}{y(\alpha_R - 1)(c + q_R(1-c))}. \]

Poor voters would vote for a platform \((\tau^P', 1)\) over \((\tau_R, 0)\) only if \( \tau^{P'} > \hat{\tau}_{PV} \) which is larger than \( \tau^R \); hence \( P \) has no Type 1 incentives to deviate. Poor voters are better off under \((\tau_R, 0)\) than the offers of \( E \) and \( R \) so \( P \) also has no Type 2 incentives to deviate.

If \( R \) deviates to \((\tau^R < \tau^P, r^R = 0)\) and \((\tau^R < \hat{\tau}_{PV}, r^R = 1)\), \((\tau^P, r^P = 0)\) still wins. For \((\tau^R \geq \tau^P, r^R = 0)\) or \((\tau^R \geq \hat{\tau}_{PV}, r^R = 1)\), the winner either does not change or makes the rich worse off. \( E \)'s moves to \((\tau^E < \hat{\tau}_{PV}, r^E = 1)\) and \((\tau^E \leq \tau^P, r^E = 0)\) do not change the winner and the moves to \((\tau^E \geq \hat{\tau}_{PV}, r^E = 1)\) and \((\tau^E > \tau^P, r^E = 0)\) change the winner but lead to \((f, f, f)\) equilibria.

Hence, profiles in which on the equilibrium path \((\tau^P < 1, r^P = 0), (0 \leq \tau^R < \min\{\tau^P, K y \alpha_R / (y \alpha_R - 1)\}, r^R = 0), (\tau^P - K y(\alpha_R - 1) < \tau^E < \tau^P + K y(1-\alpha_P), r^E = 1)\); \((a, a, a)\) are SPE if and only if \( \xi < c < \bar{c}, y \geq \max\{y_1, y_2\} \). In both of these equilibria, \( \tau^P = \tau_R \), and \( W = P \).
Hence, this implies that there exist profiles in which on the equilibrium path \((r^P < 1, r^P = 0), (0 \leq \tau_R < \tau_P, r^R = 0), (\tau^E \leq 1, r^E = 1); (a, a, a)\) that are SPE if and only if \(c < c < \tilde{c}, y \geq \text{max}\{y_1, y_2\}\). In these equilibria, \(\tau^P = \tau_R\) and \(W = P\).

\[\]

**Proof (Corollary 1):** First, note that \(y_2 > y_1\) only if \(c \alpha_R(1 - \alpha_E) + c(\alpha_R - 1)(c + q_R(1 - c)) - (\alpha_R - 1)(c + q_R(1 - c))(1 - \alpha_E)(1 - q_R(1 - c)) = p(c) < (\alpha_R - 1)(c + q_R(1 - c))(c - (1 - \alpha_E)(c + q_E(1 - c)) + c \alpha_R(1 - \alpha_E)(c + q_E(1 - c)) = m(c)\). We know that \(m(c = 0) > p(c = 0)\) and \(m(c = 1) = p(c = 1)\) and both \(m\) and \(p\) are quadratic functions that increase in \(c\). Setting \(m(c)\) and \(p(c)\) equal to each other gives \(\hat{c} = \frac{q_R p_R(\alpha_R - 1)}{q_R p_R(\alpha_R - 1) + \alpha_R q_R + q_R} \). Hence, there must be a \(\hat{c}\) such that \(m(\hat{c}) = p(\hat{c})\). Note that \(\hat{c} < \tilde{c}\). Also note that in equilibrium, there is a range in which \(\text{max}\{y_1, y_2\} = y_2\) only if \(p(\hat{c}) > 0\). Setting \(p(c = \hat{c}) > 0\), and solving it for \(\alpha_E\) leads after a few steps of algebra \(\alpha_E > 1 - \frac{q_R(\alpha_R - 1)^2 + (\alpha_R q_R + q_R)q_R(\alpha_R - 1)}{q_R q_R(\alpha_R + 1) + (\alpha_R q_R + q_R)(\alpha_R q_R - \alpha_R q_R + q_R)(\alpha_R - 1)(1 - q_R) + \alpha_R q_R q_R + q_R + (\alpha_R - 1)(2)q_R q_R + 2(\alpha_R - 1)q_R q_R + q_R + 2(\alpha_R - 1)q_R q_R} = \hat{\alpha}_E^1\). Note that \(\hat{\alpha}_E^1 < 1\). We know from the proof of Proposition 1 that \(\tau_P \leq \tau_R\) only if \(0 < [(\alpha_R - 1)(1 - q_R)(1 - (1 - \alpha_P)(1 - q_R)) + \alpha_R(1 - \alpha_P)(1 - q_R)]c^2 + [(\alpha_R(1 - \alpha_P)q_R - (\alpha_R - 1)(1 - \alpha_P)(1 - q_R))c - (\alpha_R - 1)(1 - \alpha_P)q_R q_R = n(c)\). It is easy to see that \(\tau_E > \tau_P \forall c\) when \(q_E \geq q_P\). Hence, if \(q_E < q_P\), in equilibrium, \(\text{max}\{y_1, y_2\} = y_2\) only if \(n(c = \hat{c}) > 0\), which, after a few steps of algebra, becomes \(\alpha_E > 1 - \frac{q_R(\alpha_R - 1)^2 + (\alpha_R q_R + q_R)q_R(\alpha_R - 1)}{q_R q_R(\alpha_R + 1) + (\alpha_R q_R + q_R)(\alpha_R q_R - \alpha_R q_R + q_R)(\alpha_R - 1)(1 - q_R) + \alpha_R q_R q_R + q_R + (\alpha_R - 1)(2)q_R q_R + 2(\alpha_R - 1)q_R q_R + q_R + 2(\alpha_R - 1)q_R q_R} = \hat{\alpha}_E^2\). Hence, when \(\alpha_E > \hat{\alpha}_E = \text{max}\{\hat{\alpha}_E^1, \hat{\alpha}_E^2\}\), and \(c < \hat{c}\), \(\text{max}\{y_1, y_2\} = y_2\). Note that the numerator of \(y_2\) is not a function of \(\alpha_E\). The derivative of the denominator with respect to \(\alpha_E\) is \(-c \alpha_R - q_R(1 - c)(\alpha_R - 1) + (\alpha_R - 1)(c + q_R(1 - c))(1 - q_R(1 - c))\) which is \(< 0\) when \(\alpha_R < \frac{c + q_R(1 - c)^2(1 - q_R)}{q_R(1 - c)^2(1 - q_R)}\) is \(\hat{\alpha}_R\), hence in equilibrium, \(\frac{dy_2}{d\alpha_E} > 0\) when \(\alpha_R < \hat{\alpha}_R\).

\[\]
Figure 1. Policy space and ideal policies: $PV$ (poor), $RV$ (rich), $EV$ (minority)
Income Share of the Rich ($\alpha_R$)

Minority Income Share ($\alpha_E$)

$y \downarrow$  $y \uparrow$

Figure 2. Change in $y$ as minority income ($\alpha_E$) moves from 0 to 1
Table 1: Democratic Stability in Countries with Same Per Capita Income and A Minority with Ethnic Grievances

<table>
<thead>
<tr>
<th>Economic Status of the Minority</th>
<th>Tax Rate</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>poor</td>
<td>low</td>
<td>stable</td>
</tr>
<tr>
<td>very poor</td>
<td>high</td>
<td>unstable</td>
</tr>
</tbody>
</table>


8 References


Kuhn, Patrick M. and Nils B. Weidmann, 2015, “Unequal We Fight: Between- and Within-Group Inequality and Ethnic Civil War.” Political Science Research and Methods, 3 (3): 543-68.


