Social identity, inequality and conflict*

James A. Robinson

Department of Political Science, University of California at Berkeley, 210 Barrows Hall, Berkeley, CA 94720, USA (e-mail: jamesar@socrates.berkeley.edu)

Received: June, 1998 / Accepted: November 22, 1999

Abstract. I extend the standard materialistic rational choice model of conflict to consider groups. In particular, I consider how the aggregate amount of conflict in society depends on which groups form and oppose each other. The study is motivated by empirical findings about the relationship between inequality, conflict and economic development. I focus on a salient comparison: ethnic groups vs. social classes. I show that, contrary to the conventional wisdom, class conflict is not necessarily worse than ethnic conflict. In fact, ethnic conflict is general worse when the distribution of income is more equal. I also investigate the impact of the fact that while ethnicity is immutable, since there is social mobility, class is not. I show that the direct impact of mobility of conflict is as conventionally believed, but that there are important indirect effects which make the net effect ambiguous.

Key words: groups, social mobility, cleavages, conflict

JEL Classification: D74, J62, O1

“Recent [African] history suggests that the major patterns of conflict cohere around two organizing principles: class and ethnicity. Both are shaped and defined in important ways by the state, which serves as the primary arena for social encounter and collective conflict. Thus an inquest into contemporary and prospective social conflict requires an examination of the spheres of state, class and ethnicity.” – Crawford Young (1982)

* I am grateful to an anonymous referee, Jean-Marie Baland, Amihai Glazer, Murat Somer and Thierry Verdier for their comments and suggestions. This paper was written while visiting DELTA in Paris and I would like to thank the faculty for their warm and generous hospitality and the CNRS for financial support.
1. Introduction

Economists and political scientists have recently begun to study formally how conflict and the possibility of conflict affects resource allocation and economic performance. For example, an extensive empirical literature suggests that conflict and political instability adversely affects economic development and that higher inequality causes poor economic performance by inducing increased conflict. In this paper I argue that a serious flaw in this research has taken too individualistic a view of conflict. While the approach of methodological individualism is attractive, in reality individuals act not purely in isolation, but also as part of larger social groupings and networks. I therefore try to consider how these models of conflict may be extended to this type of situation and thus attempt to place individuals within a larger social setting to see how this alters our intuitions about conflict and its economic and political determinants and implications.

But what groups are relevant? Individuals belong to many overlapping and cross cutting groups in society. While traditional Marxist analysis stressed class groupings so that workers associated with workers and capitalists with capitalists, more recent literature (see Wright, 1985) has stressed the diversity of social groupings. Rather than associate along class lines one might associate along gender, religious, or perhaps ethnic lines. Many strands of research have shown how thinking of groups in this heterogeneous way can illuminate both economic and political behavior.

To make progress in this paper I think of individuals as belonging to one of two groups. Firstly, individuals come from one of two ethnic groups, to which they are exogenously allocated. Secondly, my model is the reduced form of a standard economic one where some individuals own the means of production (technology) and receive the residual income (for the sake of familiarity I shall call these agents capitalists, though actually there will be no capital accumulation in the model), while others do not and supply only labor (workers). Thus individuals can also differ along lines of social class. An important difference

---

1 A large formal literature on conflict has developed since the seminal work of Havelock (1954), Roemer (1985), Brito and Intriligator (1985), Grossman (1991), Skaperdas (1992), Grossman and Kim (1995), Acemoglu and Robinson (2000a) and Estein and Ray (1999) endogenized the decision to engage in conflict with an aim to expropriating the wealth/political power of other agents. They studied the equilibrium degree of conflict and its determinants and implications, the trade-off between production and expropriation, and the conditions under which no-conflict allocations may occur and other related issues.

2 See Barro and Sala-i-Martin (1995) for a general review of these empirical findings. Alesina and Rodrik (1994) and Persson and Tabellini (1994) first argued that inequality leads to lower economic growth and Alesina and Perotti (1996) argue that the causal channel works via political instability and conflict.

3 The literature has been very individualistic in the sense that it has considered models where only individuals allocate time and resources to conflict. Interesting comparative results then stem from different assumptions about the distribution of various characteristics, for example income, across individuals.

4 For example, Roemer (1998) introduces religious affiliation into a voting model and shows how this alters the standard results about the relationship between inequality and the extent of income redistribution. Frieden (1991) shows how the contrasting aspects of class and sectoral affiliation can be powerful tools in political economy.
between these two types of groups is that, in the terminology of political science and sociology, class is a horizontal cleavage, while ethnicity is a vertical cleavage (there will be both workers and capitalists in both ethnic groups). I am particularly interested in which type of cleavage generates more conflict in equilibrium and how the comparative statics (for example, with respect to inequality) of conflict differ depending on the form cleavages take. In contrast to most of the conflict literature I also place conflict in a political context (as suggested by the quote from Young at the start of the paper). Thus in my model conflict is not modelled as if it were crime, but is rather conflict over who has political power.

One key intuition about the why ethnic conflict may be qualitatively distinct from class conflict stems from the idea that, while ethnic identity is immutable (or 'ascriptive'), class is not, since there is social mobility between capitalists and workers. For example, Dahrendorf (1959, p.60) argues “the weight and intensity of manifest group interests within the individual personality decrease as social mobility and the openness of conflict groups increase. The easier it is for the individual to leave his conflict group, the less likely is he to engage his whole personality in group conflict.” Later (p.191), Dahrendorf postulates “an inverse relation between the degree of openness of classes and the intensity of class conflict.” Horowitz (1985, p.90) notes “The Marxian Prophecy of class conflict in Western industrial society was undermined by the inaccuracy of this characterization of class affiliations....Social mobility, both within single lifetimes and across generations, mitigates the ascriptive character of class affiliations.” This is the main distinction drawn between ethnic groups and classes in the sociological and political science literatures (see for example, Hechter (1987) and Horowitz (1985 and 1992)). If conflict is persistent, then it seems very likely that this distinction is important in determining the equilibrium degree of conflict. This is so since a worker who anticipates upwards social mobility will be less likely to engage in conflict if the effects persist into the state where he becomes a capitalist. The expectation of mobility reduces the incentives to initiate conflict. With ethnic groups this calculation seems irrelevant.

In this paper I aim to formalize and investigate this intuition. While plausible, it seems highly likely that a comparison of the extent of ethnic versus class conflict would depend on factors other than social mobility, for example inequality, or perhaps the relative size of the groups. I conduct this comparison in a model which assumes that objectives of ethnic groups are economic. While undoubtedly a simplification, this point of view finds support in the literature on ethnicity.

5 Of particular interest is the finding of Easterly and Levine (1997) that the exceptionally slow growth in Africa can be partially accounted for by ethnic fragmentation. They conjecture that the causal mechanism linking this to growth is via conflict. One of the objects of this paper is to investigate this conjecture. For the sake of argument let us accept that conflict leads to poor economic performance. In this case while it may be true that ethnic identity is very salient in Africa, why should conflict along ethnic lines be any more damaging than other types of conflict (for example along religious or class lines)?

6 The intuition for this is similar to that investigated in Wright (1996), Moene and Wallerstein (1997) and Benabou and Ok (1998) in their studies of the implications of social mobility for the preferences of agents over tax rates.
For example Bates (1983) argues, “Ethnic groups persist largely because of their capacity to extract goods and services from the modern sector and thereby satisfy the demands of their members for the components of modernity. Insofar as they provide these benefits to their members, they are able to gain their support and achieve their loyalty.”

The results of the paper are as follows: contrary to what many believe, even in the absence of social mobility ethnic conflict can be worse than class conflict. Indeed, ethnic conflict tends to be worse than class conflict when the distribution of income in society is relatively equal. I show that while the extent of class conflict is increasing in inequality, the extent of ethnic conflict may be either monotonically increasing, decreasing or even independent of inequality. Essentially, though ethnic conflict tends to increase as inter-group inequality increases, such inequality is not immediately deducible from socio-economic inequality as usually measured. The effect of inequality on ethnic conflict depends on the socio-economic composition of the ethnic groups. If these are “unbalanced” in the sense that one group contains mostly capitalists while the other contains mostly workers, then conflict increases with inequality since ethnic conflict approximates a situation with class conflict. On the other hand, if ethnic groups are “balanced,” in the sense that each group contains similar proportions of the total number of workers and capitalists, then ethnic conflict increases when income is distributed more unequally between the groups, but changes in this distribution are relatively insensitive to changes in inequality. In one particularly interesting case (which as we shall see will be the natural outcome of a stationary equilibrium of the model with mobility) where ethnic groups are exactly balanced in this sense, the extent of conflict is independent of inequality.

Turning now to mobility, I show again that the conventional wisdom, that socio-economic mobility tends to reduce the extent of class conflict relative to ethnic conflict, is not generally correct. Whether it holds depends on exactly how one measures mobility. If there are two groups and higher mobility involves a higher rate of exit from one group only, then the direct effect on the group which experiences a higher probability of outward mobility is to reduce conflict (for the conventional reason). However, such mobility alters the relative sizes of the groups. In the model I consider (and in many natural models) this ‘group size effect’ generates incentives which work in the opposite direction making the total impact of mobility on conflict ambiguous.

What are the implications of these findings? Firstly, it helps to understand why the finding about the relationship between conventional measures of inequality (for example the Gini coefficient, or the ratio of the income shares of the top 10% to bottom 10%) and the amount of conflict does not lead to a robust cross-

---

7 For example, Horowitz (1985, p. 90) says “Had Marx been right about the closed character of class affiliations, he would surely have been describing an explosive conflict situation. The lines between contestants would be hard and fast, the stakes high.” He seems to accept the premise that, in the absence of mobility class conflict would in fact be the worst sort of conflict.

8 I use the word ‘inequality’ in the standard economic sense and with references to standard measures (such as the Gini coefficient). When I refer to inequality between ethnic groups I shall specifically distinguish this from the standard definition.
country relationship between inequality and growth.\textsuperscript{9} This is not because the conjectured relationship between inequality, conflict and growth is irrelevant, but rather because conventional indices of inequality may not capture the relevant measure of inequality for conflict. As the paper shows, this depends who is in conflict with whom.

The results also help us to understand why there is so much conflict in Africa despite the fact that many African countries appear to be rather equal (at least compared to countries in Latin America). This is because the salient cleavage in Africa is ethnicity and the conventional data on income distribution do not well capture the relevant nature of inequality. As a corollary, the model also suggests why ethnic conflict may be so bad in Africa since it suggests that ethnic conflict may be the worst sort of conflict to have in societies where income between classes is distributed relatively equally.

Policy changes, such as market liberalization and deregulation which affect socio-economic inequality will have very different implications depending on the nature of group cleavages. In the African case this result is grounds for optimism. If economic liberalization increases inequality (as many believe, and which is strongly suggested by the recent experience in the former Soviet Union and Latin America) then this does not necessarily cause large tensions in society when ethnicity is salient. However, this result is not true in ethnically divided societies where agents who benefit most from liberalization are concentrated in one ethnic group. Thus, in ethnically divided societies such as Malaysia, Indonesia, Uganda or South Africa, where the gains of liberalization seem likely to be concentrated in one ethnic group (amongst the Chinese in the first two, the Indians in the second or the white in the latter), liberalization may exacerbate conflict.

The results of this paper also have interesting implications for the question of how to consolidate democracy. An influential view of democracy sees that as an institutionalized method of solving conflict (see Dahl (1971) and Przeworski (1991) for influential statements and Acemoglu and Robinson (2000b) for a formal theory). If a group of agents lose an election and are excluded from power then they have a future chance of attaining power. If this chance is sufficiently high and the future is not discounted too heavily, then groups that lose elections may refrain from engaging in open conflict and continue to ‘play by the democratic rules.’ This seems to be the idea that many have in mind when they conjecture the difficulty of consolidating democracy in Africa due to the intransigent nature of ethnic conflict (see Horowitz (1985) for review of this literature). Yet the model of this paper does not suggest that this is so. Many Western European countries created and consolidated democracies during the late 19th century at very high levels of inequality,\textsuperscript{10} though they were dominated by class cleavages. It could be that the combination of a particular pattern of inequality and

\textsuperscript{9} See Bourguignon (1998) for an authoritative view. The relationship disappears once regional effects are included in the statistical model.

\textsuperscript{10} See Acemoglu and Robinson (2000a). For example, at around the time of the Second Reform Act in Britain (1867) income inequality was approximately the same as in modern Brazil and South Africa, the two most unequal societies on earth.
ethnic divisions in many modern African countries is inauspicious (in the sense of generating a lot of underlying conflict), but it seems improbable that it could be worse than the situation European societies faced and solved.

The paper proceeds as follows. In the next section I build the basic dynamic model of group conflict. Since the model with social mobility is necessarily more complex I begin with the simpler case of zero mobility since this already generates some interesting results. In Sect. 3 I then extend the model to consider the effects of mobility. Section 4 concludes.

2. Class and ethnic conflict in the absence of social mobility

2.1. Fundamentals: Economic structure and group dynamics

I consider a discrete time, infinite horizon, economy which consists of a non-overlapping sequence of generations with each one consisting of two-period lived agents. Each generation consists of a large number $n$ agents who will be differentiated according to whether they are workers or capitalists, and whether they are members of one of two ethnic groups, called groups $A$ and $B$. The economy is an endowment economy with a single consumption good which is the numerarie and has its price normalized to unity. All agents have identical preferences and their objective function is the expected present discounted sum of consumption over their lives, $c_t = \delta E_t c_{t+1}$, where $\delta \in (0,1)$, $c_t$ is consumption by an agent born in period $t$ in periods $s = t, t+1$, and $E_t$ is the expectations operator conditional on all information available at time $t$. Agents are not altruistic towards descendents.

As will be discussed shortly, groups are either in or out of power. Groups in power make no decisions, but groups out of power have one unit of time during youth which can be allocated either to earning income or contesting political power (engaging in conflict). Let $w(1 - e^w)$ and $\pi(1 - e^\pi)$ denote the incomes of workers and capitalists in any period when they allocate $e^w$ and $e^\pi$ units of time to conflict. $w$ and $\pi$ are exogenous. The total income of the economy in any period is $y$. I shall assume that $n^w w = (1 - \theta) y$, while $n^\pi \pi = \theta y$ where $\theta \in (0,1)$ parametrizes inequality (in the sense of factor shares) and $n^w + n^\pi = n$. Apart from their class differences, agents are also members of ethnic groups $A$ and $B$. The population is split exogenously into these two groups with a proportion $\lambda \in (0,1)$ of agents belonging to group $A$ and $1 - \lambda$ belonging to group $B$. Thus, $n^w \lambda + n^\pi (1 - \lambda) = \lambda n$ and $n^w \lambda + n^\pi (1 - \lambda) = (1 - \lambda) n$ where $n^w, n^\pi$ are the numbers of workers and capitalists in ethnic group $g \in A, B$. In the first section of the paper without mobility $n^w, n^\pi, n^w \lambda$, and $n^\pi (1 - \lambda)$ are all exogenously determined. In the next section, however, they will be endogenized and will depend on the mobility probabilities. In this section, therefore, let a proportion $\alpha$ of workers and a proportion $\beta$ of capitalists be from group $A$, with respective proportions

$^{11}$ See Perotti (1993) and Bourguignon and Verdier (1997) for models with a related dynamic structure.
1 - \alpha and 1 - \beta being from group B. Thus, \( n^A w = \alpha n^w \), \( n^B w = (1 - \alpha)n^w \) and \( n^C e = \beta n^e \), \( n^B e = (1 - \beta)n^e \). In this notation the proportion of total income that accrues to group A is, \( \alpha(1 - \theta) + \beta\theta \).

2.2. Fundamentals: conflict

Apart from this specification of the economic structure of the model and the nature of groups, there is also the possibility of conflict between the groups. I assume that conflict occurs along group lines and is mutually exclusive; moreover I formulate the objective functions at the level of the group and abstract from all issues of collective action. Conflict is either capitalist against worker, or A against B, but not both at the same time. The objective of the analysis is to compare these different situations. As discussed in the introduction, the most plausible setting for such conflict is that of politics. I therefore assume that in any period one group of agents has political power, while the other does not. The group without power can allocate time to contesting power. To model this I assume that political power changes hands with probability \( \phi(.), \) which is a strictly increasing, concave and differentiable function of the time allocated to contesting power, denoted \( e \).\footnote{\footnotetext{12} It would be easy to extend the model to allow the probability \( \phi \) to increase with the effort of the group out of power and decrease with the effort of those with power. Nevertheless, I do not formally develop this extension here because qualitatively similar results emerge and the analysis is much more involved.} For analytical tractability I shall use the specific functional assumption that \( \phi(e) = e^\sigma \) where \( \sigma \in (0, 1) \).

I assume that the benefit from being in power is that resources can be extracted from the group out of power. To model this I assume that an exogenous proportion \( \tau \) (which I shall refer to as taxation) of the income of the group out of power is transferred to the group in power.

2.3. Analysis: Class conflict

First begin with the intertemporal payoffs of a generation of workers in period \( t \) in the case where capitalists hold political power, which I denote \( V^w \).\footnote{\footnotetext{13} Since groups in power at \( t \) make no decisions I do not introduce notation for their payoffs.} This is,

\[
V^w = (1 - \tau)wn^w(t - e^w) + \delta \left[ \phi(e^w) \left( w + \tau n^e \right) + (1 - \phi(e^w))(1 - \tau)wn^w \right].
\]

(1)

If capitalists have power then worker’s wages are taxed. Part of their time, \( e^w \), is however allocated to increasing \( \phi(.), \) the probability that they control power in the next period. If they do so then they get their wage and the rents from taxing capitalists, \( w + \tau n^e \), whereas if they fail to gain power they are again taxed receiving net income of \( (1 - \tau)w \).\footnote{\footnotetext{14} Recall that effort decisions are only relevant in youth and thus in old age income is exogenous.} Optimal time allocation satisfies,

\[
1 - \tau = \delta \phi'(e^w) \tau \left[ 1 + \frac{\pi n^e}{wn^w} \right].
\]

(2)
Noting that, \( \pi \pi = \pi \pi \), equation (2) immediately shows that \( \frac{\partial \phi}{\partial \pi} > 0 \) so that the time allocated to contesting power is increasing in inequality. Letting \( \phi(e) = e^\theta \), I find

\[
e^w = \left[ \frac{(1 - \tau)(1 - \theta)}{\sigma \delta \tau} \right]^{\frac{1}{1 - \theta}}. \tag{3}
\]

Similarly, I can write the payoffs for an arbitrary generation of capitalists who hold power as

\[
V^c = (1 - \tau)\pi n^c (1 - e^c) + \delta \left[ \phi(e^c) \left[ \pi n^c + \tau wn^w \right] + (1 - \phi(e^c))(1 - \tau)\pi n^c \right]. \tag{4}
\]

The first-order condition for the problem of maximizing with respect to \( e^c \) can be easily solved to give,

\[
e^c = \left[ \frac{(1 - \tau)\theta}{\sigma \delta \tau} \right]^{\frac{1}{1 - \theta}}. \tag{5}
\]

It follows immediately from these expressions that when \( \theta > \frac{1}{2}, e^w > e^c \). Workers allocate more to conflict both because, since \( w < \pi \) the opportunity cost is lower and also, for the same reason, because the relative gain from taking power is larger.

I now define a simple measure of aggregate conflict for this economy. Note that the optimal values of \( e^w \) and \( e^c \) induce a Markov chain which governs the evolution of the economy between the two states, \{workers in power, capitalists in power\}. Using the properties of the limiting probability distribution of these states one can calculate the average amount of time that the economy is in each. Straightforward calculation shows that \( \frac{\partial \phi(e^w)}{\partial \phi(e^c) + \phi(e^c)} \) is the average amount of time that workers are in power, and \( \frac{\partial \phi(e^c)}{\partial \phi(e^c) + \phi(e^c)} \) is the average amount of time that capitalists are in power. Let \( \Omega^{cl}(\theta) \) denote the average amount of class conflict in the economy. It is this which I wish to compare under different assumptions about the structure of group conflict. I define this in the following way,

\[
\Omega^{cl}(\theta) = \frac{\phi(e^c)e^c + \phi(e^w)e^w}{\phi(e^c) + \phi(e^w)}.
\]

It is easy to see that \( \Omega^{cl}(\theta) \) is strictly convex, strictly decreasing for \( \theta \in (0, \frac{1}{2}) \) and strictly increasing for \( \theta \in (\frac{1}{2}, 1) \). Thus the average amount of conflict is minimized when \( \theta = \frac{1}{2} \) and increasing in inequality. The result that inequality increases the equilibrium amount of conflict arises because conflict effort is a convex function of inequality, which in turn stems from the assumption that \( \phi \) is a concave function. While, for example for \( \theta > \frac{1}{2} \), higher \( \theta \) reduces the conflict effort of capitalists, it increases the conflict effort of workers at a rate faster than the rate at which that of capitalists falls.

Other comparative statics of \( \Omega^{cl}(\theta) \) are intuitive. For example, \( \partial \Omega^{cl}(\theta)/\partial \tau > 0 \): the greater the ability of those with political power to extract resources from those without power, the greater the 'stakes,' the more desirable it is to attain power and therefore the greater is conflict.
2.4. Ethnic conflict

To model ethnic conflict I begin by re-writing the above equations. As in the previous section I assume that the allocation of resources to conflict takes place at the group level, therefore, letting $V^g$ represent the expected lifetime utility of group $g = A, B$ when the other group is in power, I find,

$$V^A = (1 - \tau) \left[ wn^{Aw} + \pi n^{Ac} \right] (1 - e^A) + \delta \left[ \phi(e^A) \left[ wn^{Aw} + \pi n^{Ac} \right] + \tau \left[ wn^{Bw} + \pi n^{Bc} \right] \right] + (1 - \phi(e^A))(1 - \tau) \left[ wn^{Aw} + \pi n^{Ac} \right].$$  (6)

The first-order condition is,

$$1 - \tau = \delta \phi'(e^A) \tau \left[ 1 + \frac{wn^{Aw} + \pi n^{Ac}}{wn^{Aw} + \pi n^{Ac}} \right].$$  (7)

Equation (7) shows that $e^A$ is increasing in the extent of inter-group inequality. The greater the income of group $B$ relative to that of group $A$, the more resources will $A$ allocate to gaining power. To investigate how inter-group inequality is affected by economic inequality as conventionally measured I use the definitions above to write the relative income term in (7) as,

$$\frac{wn^{Bw} + \pi n^{Bc}}{wn^{Aw} + \pi n^{Ac}} = \frac{(1 - \alpha)(1 - \theta) + (1 - \beta)\theta}{\alpha(1 - \theta) + \beta\theta}.$$  (8)

This immediately gives the first result whose proof follows directly from (8).

**Proposition 1**  (1) If each ethnic group contains the same proportion of capitalists and workers so that $\alpha = \beta$, then inter-group inequality is unaffected by changes in inequality. (2) If these proportions are different, then higher inequality increases the income share of the group which has a higher proportion of capitalists than it does of workers.

Proposition 1, while simple, shows that in general both class and ethnic conflict depend on inequality as conventionally measured. Only in an apparently very singular case is the incentive to engage in ethnic conflict independent of $\theta$.

I now consider whether, even in the absence of social mobility, ethnic conflict can be worse than class conflict. Note that from (6) and (7) we can see that $e^B$ satisfies

$$1 - \tau = \delta \phi'(e^B) \tau \left[ 1 + \frac{wn^{Aw} + \pi n^{Ac}}{wn^{Bw} + \pi n^{Bc}} \right].$$  (9)

Now I find

$$e^A = \left[ (1 - \tau)(\alpha(1 - \theta) + \beta\theta) \right]^{\frac{1}{\sigma \delta \tau}}$$

and,

$$e^B = \left[ (1 - \tau)((1 - \alpha)(1 - \theta) + (1 - \beta)\theta) \right]^{\frac{1}{\sigma \delta \tau}}$$
It is immediate from these expressions that $\frac{\partial \Omega^A}{\partial \theta} < 0$ if $\beta > \alpha$ while $\frac{\partial \Omega^B}{\partial \theta} > 0$ under the same condition.

Following the discussion in the previous section I denote the extent of ethnic conflict by $\Omega_{ET}(\theta)$ which has the following expression,

$$\Omega_{ET}(\theta) = \frac{\phi(e^A)e^A + \phi(e^B)e^B}{\phi(e^A) + \phi(e^B)}.$$  

It is easy to see that the properties of $\Omega_{ET}(\theta)$ are closely related to those of $\Omega_{CL}(\theta)$. In particular it is strictly convex. However, $\Omega_{ET}(\theta)$ is not now minimized at $\theta = \frac{1}{2}$. Again, the convexity of $e^\theta$ as a function of relative income implies that higher inter-group inequality leads to higher aggregate conflict. The interesting question here, however, is how this relates to $\theta$. It is clear that total conflict is minimized when income shares are equal (the $\theta = \frac{1}{2}$ case with class conflict) and this occurs with ethnic conflict when $\theta = \frac{1 - 2\alpha}{2(\beta - \alpha)}$ (i.e. $\Omega_{ET}(\frac{1 - 2\alpha}{2(\beta - \alpha)}) = \Omega_{CL}(\frac{1}{2})$).

Depending on the values of $\alpha$ and $\beta$ this can be greater or less than $\frac{1}{2}$. In fact, $\Omega_{ET}(\theta)$ can be monotonically decreasing or increasing for all $\theta \in [0, 1]$. For example, if $\beta = \frac{1}{2}$ then $\Omega_{ET}(\theta)$ is minimized at $\theta = 1$ for all $\alpha$ (the minimizer is not unique if $\alpha = \frac{1}{2}$). On the other hand, if $\alpha = \frac{1}{2}$ then $\Omega_{ET}(\theta)$ is minimized at $\theta = 0$ for all $\beta$. It is interesting to understand what these cases imply. Notice that, when $\alpha > \beta$, as $\theta$ increases above zero the income of group $A$ falls while that of $B$ rises. This fall in the relative incomes of the groups reduces conflict. However, the rate of change of the incomes is sufficiently slow that conflict is monotonically decreasing for all $\theta \in [0, 1]$. Changes in $\theta$ do not equalize the incomes of the two groups (the condition under which conflict is minimized). This situation is very different to one with class conflict. With ethnic conflict, an increase in $\theta$ tends to redistribute income in favor of one group rather than another, but not necessarily in a way which switches their relative positions. It is this which implies that $\Omega_{ET}(\theta)$ may be monotone in $\theta$, which is never the case with $\Omega_{CL}(\theta)$. The other case, where $\beta = \frac{1}{2}$ but $\alpha < \beta$, is similar except the roles of the groups are reversed (with the identity of the gaining and losing groups being switched).

This gives the following result which summarizes the most interesting lessons of the section.

**Proposition 2** Even in the absence of socio-economic mobility, it is not necessarily true that a society where social cleavages are in terms of social class experiences more conflict than one in which ethnicity is the dominant cleavage. In general, in more equal societies, ethnic conflict tends to be worse than class conflict. Moreover, higher inequality may lead to greater or less ethnic conflict.

3. Social mobility

I now introduce social mobility into the model of the previous section. Agents now switch exogenously between being capitalists and workers, but there is
no mobility between ethnic groups. The transitions between social classes are governed by a stationary Markov chain so that in each period there is a probability \( p \in [0, 1] \) that a worker becomes a capitalist in the next period while there is a probability \( q \in [0, 1] \) that a capitalist becomes a worker. This gives the transition matrix.

\[
\begin{array}{c|cc}
W & C \\
\hline
W & 1 - p & p \\
C & q & 1 - q \\
\end{array}
\]

I shall focus on stationary equilibria. Note that, by the law of large numbers, the transition matrix implies the following stock dynamics,

\[
n_{t+1}^W = (1 - p)n_t^W + qn_t^C
\]

\[
n_{t+1}^C = pn_t^W + (1 - q)n_t^C
\]

In a stationary equilibrium where \( n_{t+1}^W = n_t^W = n^W \) and \( n_{t+1}^C = n_t^C = n^C \), these equations imply that \( n^C / n^W = q / p \). Using, \( n^W + n^C = n \) I find that the stationary populations of workers and capitalists are, \( n^W = \frac{pn}{p + q} \), \( n^C = \frac{qn}{p + q} \). In the case of ethnic groups, \( n_{t+1}^{gw} = n_t^{gw} = n_{gw} \) and \( n_{t+1}^{gc} = n_t^{gc} = n_{gc} \) for \( g = A, B \), so that \( n_w / n_{gw} = q / p \). Using the definitions above (i.e. \( n_{gw}^W + n_{gc}^A = n^A \)), the stationary populations are \( n_{gw}^W = \frac{\lambda_p n}{p + q} \), \( n_{gc}^A = \frac{\lambda_p n}{p + q} \) and \( n_{gw}^W = \frac{(1 - \lambda_p) n}{p + q} \), \( n_{gc}^A = \frac{(1 - \lambda_p) n}{p + q} \). In the model with mobility, given a division of the population into ethnic groups, the stationary distribution of members of the groups between capitalist and worker is determined endogenously by the mobility probabilities, rather than just postulated as in the previous section.

These derivations shed an interesting light on Proposition 1. Note that, in terms of the notation of Sect. 2, we now have, \( \alpha = \beta = \lambda \). When mobility is introduced, in a stationary equilibrium the proportions of capitalists and workers within each ethnic group are equal. This gives the following interesting result.

**Proposition 3** In a society with mobility between social classes, in a stationary state, inter-ethnic group inequality is unaffected by changes in socio-economic inequality.

I now re-consider the nature of class conflict. To formulate the objective function for workers at date \( t \) note that, in maximizing the welfare of their current group they must take into account that, at the next date, part of the current group (by the law of large numbers a proportion \( p \)) will have become capitalists and in the event of power switching hands will not benefit. Agents who are mobile between the two dates clearly do not benefit from resources allocated to gaining power though ex ante no worker knows who will switch. This gives the following expression for the expected utility of workers,

\[
V^W = (1 - \tau)wn^W(1 - e^w) + \delta \left\{ \phi(e^w) \left[ (1 - p)n^W \left( w + \frac{\pi n^C}{n^W} \right) + p(1 - \tau)n^W \right] \\
+ (1 - \phi(e^w)) \left[ (1 - p)(1 - \tau)wn^W + pn^W \left( \frac{\tau wn^W}{n^W} \right) \right] \right\}
\]

(10)
It is important to understand the meaning of the right-side of (10). In the case where power switches a proportion $1 - p$ of the workers at $t$ are still workers at $t + 1$ in which case they benefit from power getting a payoff of $w + \tau \pi n^c / n^w$ (where the tax revenues extracted from capitalists have to be shared with all workers at date $t + 1$). However, a proportion $p$ of the workers become capitalists and thus are taxed at rate $\tau$. Notice that in deciding $e^w$ at date $t$ workers do not therefore take into account the preferences of current capitalists who will be workers in the next period. In the case where power does not switch, people staying workers continue to be taxed, while those who become capitalists instead benefit from being part of the ruling group.

The problem of choosing $e^w$ to maximize (10) has the first-order condition (dividing through by $wn^w$),

$$1 - \tau = \delta \phi'(e^w) \tau \left[ (1 - p) \left( 1 + \frac{\pi n^c}{wn^w} \right) - p \left( \frac{\pi}{w} + \frac{n^w}{n^c} \right) \right]$$

or,

$$1 - \tau = \delta \phi'(e^w) \frac{\tau}{1 - \theta} \left[ \frac{(1 - p)n^c - pn^w}{n^c} \right].$$

It follows that $\frac{\delta e^w}{\delta p} < 0$. Higher social mobility leads workers to reduce the amount of time they allocate to contesting political power. Using the above definitions, $\frac{(1 - p)n^c - pn^w}{n^w} = \frac{(1 - q)n^c - qn^w}{n^w}$, and thus in a stationary equilibrium $e^w$ depends on both $p$ and $q$.

Writing down the analogous expression for $V^c$ the important point to note is that it is the probabilities $q$ and $1 - q$ that are relevant in this case. It is then easy to see that $e^c$ must satisfy the following first-order condition,

$$1 - \tau = \delta \phi'(e^c) \frac{\tau}{\theta} \left[ (1 - q)n^w - qn^c \right],$$

with, $\frac{(1 - q)n^w - qn^c}{n^w} = \frac{(1 - q)n^w - qn^c}{n^w}$.

What is the effect of mobility of class conflict (as measured in Sect. 2). This depends on how mobility is measured. Consider first an increase in $p$. In the model conflict is persistent in the sense that it alters the future political state. The direct effect of higher $p$ is to reduce the incentive of workers to engage in conflict for the conventional reason. However, as $p$ increases with $q$ constant there is an induced 'group size effect.' This comes from the implied increase in the relative size of the group of capitalists relative to workers. In a stationary equilibrium it must be true that $n^c / n^w = q / p$, thus if $p$ is higher, the relative size of the group of workers must be larger in equilibrium. The higher is $n^w$ relative to $n^c$, the less attractive it is for workers to gain power, and this tends to reinforce the effect of $p$ inducing lower $e^w$. However, it is clear that for capitalists, since the direct effect is absent ($q$ is constant in this thought experiment), the only thing left is the 'group size effect.' This tends to increase the amount of time that capitalists allocate to conflict. For my measure of aggregate conflict this tends to offset the effect of $p$ on $e^w$ and thus renders the aggregate effect of
this measure of mobility on conflict indeterminate. If we consider the case where 
$p = q$, then higher $p$ simultaneously increases $q$. In this special case the group 
size effect vanishes and conflict unambiguously falls.

To write the objective function for group $A$ in the case of ethnic conflict with 
social mobility note that, by the law of large numbers, at the end of any period a 
proportion $p$ of the workers of group $A$ will have become capitalists, while 
similarly, a proportion $q$ of the capitalists in group $A$ will have become workers. 
However, in a stationary state, for a group deciding at time $t$ on the amount of 
resources to allocate, the group will be identical at date $t + 1$ in terms of the 
proportion of capitalists and workers. To see this note that the objective function 
can be written as,

$$
\hat{V}_A = (1 - \tau) \left[ w_n^{Aw} \pi + n^{Ac} \tau \right] (1 - e^A) 
+ \delta \left( \phi(e^A) \left[ pn^{Aw} \pi + (1 - p)n^{Aw} w + qn^{Ac} w + (1 - q)n^{Ac} \pi 
+ \tau \left[ wn^{Aw} + \pi n^{Ac} \right] + (1 - \phi(e^A)) \left[ (1 - \tau) \left[ pn^{Aw} \pi + (1 - p)n^{Aw} w 
+ qn^{Ac} w + (1 - q)n^{Ac} \pi \right] \right] \right). 
$$

(11)

Here $pn^{Aw} \pi + (1 - p)n^{Aw} w + qn^{Ac} w + (1 - q)n^{Ac} \pi$ is the expected pre-tax income 
of the group in the next period given the mobility probabilities. However, in a 
stationary equilibrium, $n^{Aw} = (1 - p)n^{Aw} + qn^{Ac}$ and $n^{Ac} = (1 - q)n^{Ac} + pn^{Aw}$. 
It is immediate therefore that the extent of social mobility has no impact at all 
on the behavior of an ethnic group since the objective function (13) collapses to 
(6) in Sect. 2.4.

The following result summarizes the main implications of this section.

**Proposition 4**: While ethnic conflict is independent of the extent of social mobility, 
its effects on class conflict are ambiguous. While the direct effect is to reduce the 
incentive to engage in conflict, the indirect 'group size effect' tends to increase 
the amount of conflict.

4. Conclusion

This paper developed a simple framework to make some tentative progress on 
some of the fundamental issues about group conflict. These are, firstly, how 
does the type of group affect the amount of conflict in equilibrium. Secondly, 
how is this affected by the extent of inequality between groups and how is this 
related to conventional measures of socio-economic inequality. Thirdly, how does 
differential mobility between groups affect outcomes.

The main findings of the paper were as follows. Contrary to the conventional 
wisdom in the social science literature, it is not generally true that class conflict 
is worse than ethnic conflict. In a natural model of conflict it is the extent of 
inter-group inequality that is the crucial factor in determining the level of conflict 
and there is no a priori reason why the extent of inequality between social classes 
should be greater than that between ethnic groups. Indeed, I showed that ethnic 
conflict tended to be worse in situations where inequality, as conventionally
measured, was low. Moreover, the analysis did not substantiate the intuition that social mobility is necessarily an important mitigating factor. Although the direct effects of social mobility tend to reduce the extent of class conflict there seem to be important indirect effects working through the relative size of groups which can offset this. I showed that, if workers became more mobile in the sense that in any period the probability that a worker was a capitalist in the next period increased, while this reduced the incentive of workers to engage in conflict, in a stationary equilibrium it actually increased the incentives of capitalists to do so. The aggregate impact on conflict is therefore ambiguous. I argued that these results have some interesting implications for the literature linking inequality and conflict to comparative economic development.

References


