

A Model of Social Identity with an Application to Political Economy: Nation, Class and Redistribution*

Moses Shayo

The Hebrew University of Jerusalem

Department of Economics

mshayo@huji.ac.il

April 2009

Abstract

This paper develops a model for analyzing social identity and applies it to the political economy of income redistribution, focusing on class and national identities. The model attempts to distill major findings in social psychology into a parsimonious statement of what it means to identify with a group and what factors determine the groups people identify with. It then proposes an equilibrium concept where both identities and behavior are endogenously determined. Applying this model to redistribution helps explain three empirical patterns in modern democracies, which are documented here. First, national identification is more common among the poor than among the rich. Second, national identification tends to reduce support for redistribution. Third, across democracies there is a strong negative relationship between the prevalence of national identification and the level of redistribution. The model further points to national eminence, national threats and diversity within the lower class as factors that can reduce redistribution.

*I am especially grateful to Roland Benabou, Anne Case and Thomas Romer, as well as to Eddie Dekel, Avinash Dixit, William Easterly, Sheldon Garon, Ori Heffetz, Macartan Humphreys, George Loewenstein, John Londregan, Stergios Skaperdas, the editors of the APSR, three anonymous reviewers, and seminar participants at Carnegie Mellon, Columbia, George Mason, The Hebrew University, NYU, Princeton and Tel Aviv University for their thoughtful comments and suggestions.

Introduction

Why do blue collar American workers support less redistribution than their German counterparts? Why are they so proud to be Americans? How can we explain the fact (to be established below) that in most economically advanced democracies, national pride is associated with reduced support for redistribution, and that democracies with less national pride actually redistribute more? This paper suggests that well-documented processes of social identification can, when applied to a standard political economy model of redistribution, help explain these and related phenomena.

For the past three decades, social identity has been the focus of intense research throughout the social sciences. In particular, social psychologists and experimental economists have produced a rich set of robust empirical results based on both experimental and field studies. This paper takes these results seriously. It first attempts to distill them into a parsimonious statement of what it means to identify with a group, and what factors are important for determining which groups people are likely to identify with. The paper then proposes a concept of equilibrium where the profiles of actions and social identities are jointly determined.

The basic theoretical framework is straightforward. A society may have many social groups – “American”, “Hispanic”, “middle class” and so on – but in any given situation individuals “identify” with only some of these. Given their social identities, they choose courses of action, which determine the aggregate outcome. That outcome forms the social environment that in turn affects the pattern of social identities. A Social Identity Equilibrium (SIE) is a steady state where *(i)* each individual’s behavior is consistent with his social identity; *(ii)* social identities are consistent with the social environment; and *(iii)* the social environment is determined by the behavior of the individuals.

Social identification is defined in terms of preferences: to identify with different groups means to have different preferences over outcomes. Preferences involve two novel components. The first is the status of the various groups that exist in society. Group status is the relative position of a group on valued dimensions of comparisons (such as wealth, occupational status and educational achievement). Thus, if we assume that individuals value consumption, then a group characterized by high levels of consumption will have a higher status than a group characterized by low levels, other things equal. The second component is the perceived similarity between an individual and the other members of the group. This component is modeled using the notion of distance in conceptual space from cognitive psychology.

Each agent is characterized by a vector of attributes. The perceived distance from a given group is then simply a weighted Euclidean distance between the agent and the prototype of that group, with the weights reflecting the relative salience of the various dimensions. Given these two components, an individual is said to identify with group J if (1) he cares about the status of group J and (2) he wants to resemble the members of group J .

Next, the paper provides a description of the process of identification with specific groups. Two factors are at work here. First, a cognitive factor: people are more likely to categorize themselves as members of a group the more “similar” they are to the other members of that group. Second, an affective factor: people tend to identify more with high status groups than with low status groups. Importantly, the factors underlying the process of identification – status and distance – are the same two factors that affect individual behavior under identification. This observation helps to make the analysis of social identity tractable.

The model generalizes several existing models of social preferences. It augments the Akerlof and Kranton (2000) approach – which emphasizes the tendency of group members to follow the prescribed behavior of their group – with a second feature of identification: the willingness to sacrifice material payoffs in order to enhance group status. This last feature also generalizes models of altruism, since in many situations enhancing a group’s status is equivalent to enhancing the welfare of other group members. Notice however that, to borrow a distinction from Hegel, this altruism is *particular* rather than *universal*: it is directed at ingroup members only. Further, since the model specifies the factors that determine who is likely to identify with what group, it can help account for some of the observed heterogeneity in altruism and conformity to group norms.

In the present paper, this general framework is applied to one specific issue: income redistribution in democracies. Since the early studies of voting behavior, it has often been suggested that social context and social groups have a crucial effect on political choices (Lazarsfeld et al. 1948; Conover 1984; Miller et al. 1991; Beck et al. 2002). This view is supported by observed differences in voting patterns and reported policy preferences across social groups such as class, race and religious affiliation, controlling for measures of economic self-interest (e.g. Evans 2000; Luttmer 2001; Glaeser and Ward 2006). This paper explores the possibility that part of the reason may be that people do not simply vote their economic self-interest: they also vote their identity. I focus on two prominent identities: class and nation.

The model starts from the simple point that if income redistribution enhances the status of the lower

class more than it does national status, then class identification makes redistribution a more important issue to low-income voters than does national identification. Thus, two types of equilibria may emerge. In the first, the members of the lower class (who constitute a majority) identify with their class. They hence vote for a relatively high level of redistribution. A high level of redistribution can in turn help strengthen that class identity by endowing it with a higher status. In the second type of equilibrium, members of the lower class tend to think of themselves more as members of the nation as a whole than as members of a low-status part of it. They are hence less concerned with income redistribution and vote for a lower level of redistribution than they would under class identity. Again, low levels of redistribution can in turn help make identification with the lower class less attractive.

Which of these equilibria is likely to emerge? This depends first on perceived distances, which in turn depend on the extent and salience of common national attributes compared to income-specific and class-specific attributes. For example, an increased sense of commonality with fellow nationals (due to a perceived common threat, say) or a reduced sense of similarity to other members of the lower class (due to heterogeneity within the lower class, say) are both likely to increase national identification and reduce class identification among the relatively poor. They hence promote a lower level of redistribution. Second, the equilibrium attained depends on exogenous sources of national and class status. Nations with high international stature, for example, are more likely to engender national identification than inferior ones, other things equal. Further, since pre-tax income distribution affects the status of the lower class, the model points to the possibility that an increase in pre-tax inequality will cause the poor to shift from a class identity to a national identity, which could lead them to vote for *less* redistribution. Finally, in certain situations multiple equilibria can exist under the same economic and institutional fundamentals. This suggests a potentially lasting effect of historical contingencies.

Can this model help explain observed patterns of national identification and redistribution? The final section of the paper examines the main implications of the model, both at the individual level and at the national level, using data from the ISSP 1995 – National Identity surveys, the World Values Survey, and the Luxembourg Income Study. Overall, the model seems to account for the major patterns. First, in practically all modern democracies, poorer individuals are more likely to be nationalistic, as the model suggests (since, being the majority, the poor are more similar to the national prototype and since their more immediate social group has a lower status than the status of the high class). Second, in most economically advanced democracies national identification reduces support for redistribution. This

effect appears to be very large when compared to the effect of economic self-interest. Third, the model implies that regardless of whether differences in redistributive systems arise from exogenous factors or from multiple equilibria, we should observe a negative relationship between the prevalence of national identification and the extent of income redistribution. A cross-country analysis reveals a very strong negative relationship between these two variables. Indeed, when looking at well-established democracies, the R^2 is between 60% and 72%.

The paper proceeds as follows. The rest of this section relates the paper to other explanations of income redistribution. The next section presents the model. The third section of the paper solves the model and discusses possible interpretations and implications. The empirical results are presented in the fourth section. Appendix A reviews the experimental evidence underlying the theoretical framework. Proofs are in Appendix B.

Related explanations

Before specifying the model, it is worthwhile relating the paper to three strands of the literature on income redistribution. First is the literature on party competition, particularly John Roemer and his coauthors' work on policy bundling (Roemer 1998; Lee and Roemer 2006; Roemer and Van der Straeten 2005, 2006). This literature shows how, given a distribution of voter preferences over tax policy and some non-economic issue (e.g. race), and when parties compete by proposing two-dimensional platforms, an equilibrium can emerge where voters support a party whose proposed policy does not maximize their economic interests. Notice that unlike the model of social identity proposed here, policy bundling theory is not meant to explain the distribution of policy preferences. Hence it does not offer an account of the individual-level patterns presented in the empirical section of this paper, nor of how preferences may react to policy. However, this literature suggests that in addition to the *direct* effect of national identification on preferences for redistribution – which lies at the heart of the present model – there may exist a further policy bundling effect, which emerges from party competition. Such an effect could amplify the relation (at the country level) between national identification and redistributive policies.

Second, it has been argued that the poor in the US do not support redistribution because they misunderstand their economic interests and are distracted by various wedge issues (Frank 2004). The model proposed here does not dismiss such non-economic issues, and attempts to employ insights from social psychology to better understand the circumstances under which voters are more likely to care

about such issues. The model also suggests a mechanism through which the relative salience of certain attributes (e.g. “American values” vs. class-related attributes) can affect identification patterns and hence policy preferences.

Finally, the paper relates to the large literature on the cross-country variation in welfare systems, in particular in the US and Western Europe. There are two prominent classes of explanations. First, there are explanations based on differences in countries’ economic, political or social characteristics, e.g. pre-tax income distribution (Romer 1975; Meltzer and Richards 1981), income mobility (Benabou and Ok 2001) and political and legal institutions (Persson and Tabellini 2003). Second, there are explanations based on the possibility of multiple redistributive equilibria. That is, even societies with the same socioeconomic and political fundamentals may end up with very different redistributive regimes (Piketty 1995; Benabou 2000; Benabou and Tirole 2006). The present paper contributes to both of these classes of explanations. Thus, while the model allows for the standard median-voter result regarding the effect of pre-tax income inequality, it also suggests the possibility of a shift in identification patterns as a result of an increase in inequality, which can lead to reduced demand for redistribution. Further, the model highlights the importance of several other factors (e.g. diversity within the poor class) for redistributive politics. With respect to the possibility of multiple equilibria (and history dependence), the contribution of the proposed model is that instead of relying on multiple beliefs or on market imperfections, it highlights the effect of redistribution on the status of the lower class and hence on the likelihood that members of that class will identify with it and vote according to their class membership.

The Model

This paper examines whether a simple model of social identity, grounded primarily in evidence from social psychology, can help us understand patterns of national and class identification and their relation to redistributive policies. Formally, the model is a standard normal form game in which each agent i chooses an action (vote) a_i and a group to identify with g_i . The utility of each agent i is going to be a function of three variables: π_i – his material payoff; d_{ig_i} – his perceived distance from group g_i ; and S_{g_i} – the status of that group. I will explain each of these variables in turn.

Political economy

The material payoff comes from a standard model of redistribution by linear-taxation. There is a set of agents \mathcal{N} and the analysis focuses on a subset $N \subset \mathcal{N}$ of agents who compose a single nation. A proportion $\lambda > 0.5$ of the agents in this nation have a relatively low pre-tax income of y_p , while $1 - \lambda$ have income y_r where $y_r > y_p$. These agents will be referred to as “poor” and “rich”, but one should keep in mind that the “poor” are the median income agents. To avoid dealing with ties, assume that the number of poor is greater than the number of rich by more than 1. Denote mean income by y .

For each agent i , let π_i be that agent’s *material payoff*. This is just his post-tax income, composed of income net of taxes and a government transfer k :

$$\pi_i(t) = (1 - t)y_i + k \tag{1}$$

where $t \in [0, 1]$ is the tax rate. As in the standard model of redistribution financed by distortionary taxation (Romer 1975) income taxation involves deadweight losses, which I assume to be quadratic (following Bolton and Roland 1997). The government’s budget constraint is then:

$$k = (t - \frac{t^2}{2})y \tag{2}$$

I keep the political process as simple as possible, so that the equilibrium policy directly reflects the policy preferences of the majority of voters. This seems like a reasonable approach to general-interest redistribution in well-established democracies. Thus, all agents are assumed to vote directly and sincerely over the tax rate (that is, each agent votes for his most preferred tax rate), and the median tax rate is adopted.¹ Formally, an action $a_i \in A_i = [0, 1]$ by agent i is a vote for a tax rate. Given a profile of votes a , the chosen tax rate $t^* \in [0, 1]$ is determined by

$$t^* = f(a) = \text{median}\{a_i\}_{i \in N}. \tag{3}$$

It can be easily verified that absent social-identity considerations, the chosen tax rate is $\hat{t} = \frac{y - y_p}{y}$. This replicates the standard median voter result, whereby the equilibrium level of redistribution is higher

¹This mechanism yields similar outcomes to Downsian two-party electoral competition or a pure majority rule (assuming agents do not play weakly dominated strategies), yet it significantly simplifies the analysis (see Shayo 2007). I am grateful to the editors for suggesting such a simplification.

the greater is the difference between median and mean income (Meltzer and Richard 1981).

Social identity

I now define the building blocks of the proposed model of social identity. Each of these building blocks is briefly introduced in general terms, and is then applied to the redistribution setting. The general theoretical framework attempts to capture concisely empirical regularities documented in three well-established strands of research that study behavior in groups: the minimal group paradigm; public goods experiments; and the study of conformity. These regularities are reviewed in Appendix A, which may be read now. A more thorough discussion of the model and the evidence can be found in Shayo (2007).

Social groups. I start from a given non-empty set of *social groups* $G = \{J : J \subseteq \mathcal{N} \text{ is a social group}\}$. One can think of social groups as categories that individuals learn to recognize when growing up and living in a society. I do not model the cultural or sociological process by which these categories evolved. Rather, the focus is on the process of identification with given social groups. Thus, G is not an arbitrary collection of subsets of the population – its elements must be socially significant categories. Denote by G_i the set of social groups to which agent i belongs: $G_i = \{J : J \in G \text{ and } i \in J\}$.

The present application concentrates on two of the most politically prominent types of social groups in modern industrial societies: nations and social classes.² As mentioned, I focus on a single nation. While there are other nations around, for the most part they will be kept in the background. In this nation there are three social groups. The first two – which I term classes – are the “Poor” and the “Rich”. The third is the “Nation”, which includes all the agents in the society. The set of social groups is thus $G = \{P, R, N\}$ where $P = \{i \in N : y_i = y_p\}$ and $R = \{i \in N : y_i = y_r\}$. I use lowercase p and r to denote typical low-income and high-income agents, respectively, and uppercase P and R to denote the social groups.

The identification process involves both a cognitive and an affective factor. I begin with the former.

Perceived distance. A key factor in categorization decisions in the cognitive psychology literature is the perceived difference between the stimulus that is to be categorized, and the attributes of the available categories. Following Turner et al. (1987) I propose to adopt this approach to the process of categorizing *oneself* into a group. While there are many ways to think about perceived difference, I

²Note that the application abstracts from other social categories and may thus be inadequate for studying countries where regional or ethnic groups constitute the major social categories. I return to this point in the empirical section below.

shall adopt the notion of “distance in conceptual space” (e.g. Nosofsky 1986, 1992; Gärdenfors 2000). Each agent is characterized by a vector of attributes or qualities $q_i = (q_i^1, q_i^2, \dots, q_i^H)$. A social group is characterized by the “typical” attributes of its members, denoted q_J . For simplicity I assume q_J is the mean across group members, i.e. $q_J = \frac{1}{|J|} \sum_{i \in J} q_i$. q_J is called the *prototype* of group J .³ If attributes are coded as binary variables, then q_J^h is simply the proportion of agents in group J with attribute h . The *perceived distance* between individual i and social group J is then represented by a weighted Euclidean distance function:

$$d_{iJ} = \left(\sum_{h=1}^H w_h (q_i^h - q_J^h)^2 \right)^{1/2} \quad (4)$$

where $0 \leq w_h \leq 1$ and $\sum w_h = 1$. The w 's are *attention weights* (Nosofsky 1986): the more salient is attribute h relative to other attributes, the higher is w_h .

This specification allows the social environment to affect perceived distances in two distinct ways. First, distances may change as the attributes of the agents (namely the values of q_i and q_J) change. For example, the higher the fraction of people in a group that speak my language, the more similar I perceive myself to that group. Second, perceived distances can change as the attention paid to the various dimensions changes, e.g. as the salience of income increases relative to that of skin color.

In the present application, an agent's first attribute is his income (y_i). Assume for now that there is no within-class heterogeneity. Thus there is a set of attributes shared by the members of the nation and a set of class-specific attributes shared by the members of one class. For simplicity we can write all the national (or class specific) attributes as a single binary variable. We thus have:

$$q_i^N = \begin{cases} 1 & \text{if } i \in N \\ 0 & \text{otherwise} \end{cases} \quad \text{and} \quad q_i^C = \begin{cases} 1 & \text{if } i \in P \\ 0 & \text{if } i \in R \end{cases} .$$

Denote the attention weight on income by w_y , the attention weight on the national attributes by w_N , and on class-specific attributes by w_C . The distance function is hence given by:

$$d_{iJ}^2 = w_y (y_i - y_J)^2 + w_N (q_i^N - q_J^N)^2 + w_C (q_i^C - q_J^C)^2, \quad J \in \{P, R, N\} \quad (5)$$

³Most of the results below are unaffected if the prototype is the median rather than the mean. Part 3(a) of Proposition 2 and Proposition 4 would, however, need to be modified.

It is important to stress that while in general perceived distances can depend on agents' actions, in the present application distances are exogenous. I do not directly model the determination of policies (e.g. the school system) that affect agents' attributes or the relative salience of these attributes.⁴ Therefore, any possible effects of the adopted tax policy on perceived social distances are left outside the analysis. This may not be a very restrictive assumption if classes are mostly characterized by attributes relating to pre-tax income and to socially-inherited qualities. A recent British survey suggests that this may be a reasonable approximation. Respondents (N=1955) were asked which were “the best indicators of someone’s social class – that is, most likely to tell you which class they belong to”. The most common answers were “their occupation” (44%), “the area in which they live” (43%) and “their accent” (38%), followed by “their income” (34%), and “which school they went to” (27%).⁵

Group status. Social identification involves more than just a cognitive process of self-categorization. It also includes an important affective factor that relates to the “value” of the group. Studies in social psychology argue that often, the evaluation of groups cannot be based on some absolute standard. Rather, it is determined through social comparisons to other groups along valued dimensions of comparisons (Tajfel and Turner 1986). In our setting one such dimension is material payoff. Let $\tilde{\pi}_J(t)$ be some measure of group J 's material payoff when the tax rate is t . Let $r(J)$ be the reference-group of group J . The *status* of group J is then given by a simple linear function of the form:

$$S_J(t) = \sigma_0^J + \sigma_1^J (\tilde{\pi}_J(t) - \tilde{\pi}_{r(J)}(t)), \quad J \in \{P, R, N\} \quad (6)$$

where σ_1^J is a positive constant. The parameter σ_0^J summarizes all exogenous factors that affect the status of group J . This captures the possibility that material payoffs are not the only dimensions of comparison that determine group status.⁶

For the two classes, a natural measure of material payoffs is the material payoffs of their members, i.e. $\tilde{\pi}_R = \pi_r$ and $\tilde{\pi}_P = \pi_p$. However, national material payoff can be measured in many ways, depending on the weight given to the material welfare of the poor and of the rich. I therefore write:

$$\tilde{\pi}_N = \alpha \pi_p + (1 - \alpha) \pi_r, \quad \alpha \in [0, 1]. \quad (7)$$

⁴Similarly, the model abstracts from conformity effects of social identification. I return to this point below (p. 12).

⁵YouGov Survey, August 2006, online at www.yougov.com.

⁶It is implicitly assumed that there is general agreement in society about the relative standing of the various groups. This seems to be a reasonable benchmark and accords with sociological evidence (see Weiss and Fershtman 1998).

Thus, if $\alpha = \lambda$ then national material payoff is measured by (post-tax) income per capita. If $\alpha = 1$ we have a Rawlsian measure of national material payoff while if α equals zero it is measured by the post-tax income of the nation's richest individuals.⁷ Finally, I assume that each class forms the reference group of the other class. The nation's reference group is some other nation (or nations).

We are now in a position to formulate a definition of social identity and a solution concept for the model.

Definition 1 *Agent i is said to identify with social group $J \in G$ if his utility over outcomes [tax rates] is decreasing in d_{iJ} and increasing in S_J .*

In other words, identification with a group means caring about the status of that group while paying a cognitive cost that increases with the distance between the individual and the group. Loosely speaking, identification thus implies making the “group's interest” part of one's own interest. Given the status function (equation 6) this means caring about the material payoffs of other ingroup members. Further, the cognitive cost of identification implies that as long as agents identify with a given group, they want to be similar to typical members of that group: from wearing the group's characteristic clothes and symbols, to imitating typical group behavior and expressing typical group attitudes.⁸

For tractability, I will assume that the utility function of an agent i that identifies with group J takes a simple additive form

$$U_i(t) = \pi_i(t) - \beta d_{iJ}^2 + \gamma S_J(t) \quad (8)$$

where β and γ are positive constants. I now propose an equilibrium concept that captures the endogenous determination of identification. Formally, it is a standard Nash equilibrium.

Definition 2 *A Social Identity Equilibrium (SIE) is a profile of actions $a = (a_i)_{i \in N}$ and a profile of social identities $g = (g_i)_{i \in N}$ such that for all $i \in N$ we have $a_i \in A_i$, $g_i \in G_i$ and*

$$\pi_i(f(a_i, a_{-i})) - \beta d_{ig_i}^2 + \gamma S_{g_i}(f(a_i, a_{-i})) \geq \pi_i(f(a'_i, a_{-i})) - \beta d_{ig'_i}^2 + \gamma S_{g'_i}(f(a'_i, a_{-i}))$$

⁷While material payoffs affect national status, one suspects that such effects are small and that factors exogenous to the model are the dominant determinants of national status. These factors are captured by the parameter σ_0^N .

⁸It is noteworthy that these two components bear some resemblance to prominent notions of party identification. That is, identification with a party has been associated both with supporting (voting for) the party (Campbell et al. 1960; Miller 1991; Bartels 2000) and with the adjustment of attitudes towards the party's position (Campbell et al. 1960; Bartels 2002; Layman and Carsey 2002; Goren 2005). Further, much of the debate in this literature has revolved around the stability of identifications. This is also the question that the notion of equilibrium below seeks to address.

for all $a'_i \in A_i$ and all $g'_i \in G_i$.

Thus, SIE requires not only that actions be optimal given what others are doing, but also that each agent’s social identity be “optimal” given his social environment. It should be stressed, however, that this is an equilibrium requirement. It is not asserted that there exists some controlled, deliberative process in which individuals “choose” their social identities optimally. Rather, the definition of SIE employs the tools of optimization to describe a *steady state* that takes into account the observed process whereby (a) given cognitive distance, individuals tend to identify with the group that possesses the higher status, and (b) given status, tend to identify with the group more similar to themselves.⁹

Discussion

Before solving the model of redistribution, a few remarks relating the general SIE framework to some existing formal models are in order. First, in situations where one’s actions do not affect the status of whatever groups one identifies with, nor one’s perceived distance from these groups, an agent in the proposed framework behaves just like the selfish, material payoff maximizing agent of the standard economic model. However, the framework points to other situations where this model might be inadequate and offers a simple way of extending it to better understand these situations.

Second, the framework generalizes the prominent feature of Akerlof and Kranton’s (2000) model of social identity. Akerlof and Kranton focus primarily on the effects of social “roles” and “prescriptions” that indicate the appropriate behavior for people in given social categories. “Identification” in their terminology essentially means the adoption of such rules of behavior. In the framework proposed here, modes of behavior that affect perceived distances between self and group can similarly induce agents to behave in accordance with their group’s prototypical behavior. At the same time, the framework can generate utility losses from – and punishment of – non-prototypical behaviors by *other* group members.¹⁰

⁹It is worth mentioning four possible extensions of the equilibrium concept that are not pursued in the present paper. First, while SIE is defined as a situation where each individual identifies with a single group, identification with several groups can be incorporated by allowing for mixed strategies. Second, identifying with *no* group can be allowed by adding ϕ to the set of social groups G_i , and defining S_ϕ and $d_{i\phi}$ as constants, whose values reflect the psychic cost of not identifying with *any* social group. Third, identifying with groups one does *not* belong to can be allowed by having the entire set G (rather than G_i) be the set of possible identities for agent i . Finally, in Shayo (2007) I develop a more general equilibrium concept, which only requires that actions be optimal given current identities and identities be optimal given current actions – not that agents choose actions taking into account alternative identities they can have. This concept can accommodate a tendency of individuals to underestimate changes in their preferences (see Loewenstein and Angner 2002 and Loewenstein et al. 2003). However, using this more general concept does not meaningfully affect the results of the redistribution model studied here. Following the suggestion of the editors I hence use the familiar Nash formulation.

¹⁰In a similar vein, the model can capture an important aspect of inequality aversion (Bolton and Ockenfels 2000; Fehr

However, in equilibrium such conformist behavior (and punishment of deviants) only emerges under conditions that sustain identification with the group in question, i.e. its status is sufficiently high and it is perceived as sufficiently similar to the agent. Further, what constitutes the prototypical behavior may itself be determined endogenously.

Third, the framework generalizes models of altruistic preferences and allows at least a partial analysis of the circumstances under which people are more likely to hold such preferences. Specifically, since ingroup status depends positively on the payoffs of ingroup members, then in situations where actions affect these payoffs we may observe altruistic behavior. However, altruism is “parochial” rather than universal: it only applies to ingroup members (Bernhard et al. 2006; Fowler and Kam 2007). Indeed, when actions affect an outgroup that competes with the ingroup for status, we may observe behavior that *harms* outgroup members. Moreover, in equilibrium such ingroup favoritism is only expected under conditions that sustain identification with that ingroup. This is the focus of the present paper.

Finally note that the definition of SIE does not impose any coordination requirement – in principle, one may identify with a group regardless of whether other members of that group identify with it (cf. Bawn 1999). Indeed, by itself the social identity of agent i has no effect on other agents’ payoffs – neither on their material payoff nor on the status of whatever group they identify with. It is only when social identity affects the choice of actions that such effects come about.

The above remarks highlight two straightforward – but important – implications of the general SIE framework that are left out of the present analysis of redistribution. First, the social identity framework can generate deviations from self-interest due to conformity effects. If it is an established practice in a given group to oppose redistribution, and if political behavior in that group is sufficiently salient, then agents who identify with that group will modify their own political behavior accordingly (see Dickson and Scheve 2006). Thus many outcomes could be self-reinforcing. By keeping d_{iJ} exogenous, the present application abstracts from conformity effects and focuses solely on the status effects of redistributive policies. A second implication of the general framework is that people may be more likely to support redistribution if the transfers are specifically targeted to their own group (Luttmer 2001). The present application largely abstracts from heterogeneity within income-groups and focuses on general-interest redistribution.

and Schmidt 1999). That is, if income forms a sufficiently salient attribute, then agents who identify with a certain group seek to minimize differences in income between themselves and other ingroup members.

Social Identity Equilibria

I begin the analysis by looking at how the preferred tax rate is affected by the group one identifies with.

Let $t_J^*(y_i)$ be the preferred tax rate of an agent with income y_i that identifies with group J .

Proposition 1 *The tax rate preferred by a poor agent is lower if he identifies with the nation than if he identifies with his class: $t_N^*(y_p) < t_P^*(y_p)$.*

The intuition is given in Figure 1. In each panel, the solid curve represents a possible choice set in the $\pi_p - \pi_r$ plane. When the tax rate is zero (the top point on the curve), each agent gets his pre-tax income. As the tax rate increases, π_r decreases monotonically, while π_p initially increases but eventually decreases as the deadweight losses of taxation outweigh the gains from the transfers. When $t = 1$, material payoffs are equal for the rich and the poor. Note that π_p reaches its maximum when $t = \hat{t} = \frac{y - y_p}{y}$. The implications of class identification are illustrated in panel a. Class identification induces individuals to care – in addition to their own material payoffs – about the relative status of that class. Therefore, the indifference curve (illustrated by the dotted line) of a poor agent that identifies with the poor class has a positive slope, yielding a higher preferred tax rate ($t_P^*(y_p) > \hat{t}$). National identification, on the other hand, shifts agents' social identity concerns to the status of their nation. As noted above, national status may have to do primarily with variables that are not clearly related to tax policies – in which case the preferred tax rate would still be \hat{t} . However, to the extent that the material payoffs of the rich members of the nation also affect national status, the indifference curve of a poor nationalist has a negative slope, as illustrated in panel b. This yields a lower preferred tax rate ($t_N^*(y_p) \leq \hat{t}$). Notice that even in the extreme case where national status depends strongly on a Rawlsian measure of national welfare (hence vertical indifference curves), a national identity induces a lower ideal tax rate than does a class identity.

It is noteworthy that for a rich agent, the effect of a national identity on the preferred policy is not so clear-cut. It depends on the sensitivity of national status to national material payoffs (captured by σ_1^N) and, crucially, on the extent to which the material payoffs of the poor affect the evaluation of national material payoffs (captured by α). If these relations are sufficiently strong, then a national identity could imply a *higher* ideal tax rate than does a rich-class identity (which implies zero redistribution). The possible pro-redistribution effect of national identity is consistent with a prominent view in political theory, according to which national identification can help promote redistributive policies (e.g. Miller

1995; Tamir 1993). In a country where (contrary to the present model) the rich set the tax rate, but where national status is nonetheless significantly affected by the living conditions of the poor, a national identity may indeed be pro-redistributive. The evidence presented in the next section suggests that, by and large, this is not the case in industrialized and well-established democracies.

Let us now turn to the determination of the equilibrium tax rate. I first provide the intuition for the main result stated below. Since the poor are the majority, and vote sincerely, the equilibrium tax rate is the tax rate most preferred by the poor.¹¹ That is, the tax rate is $t_N^*(y_p)$ if the poor identify with their nation, and it is $t_P^*(y_p)$ if they identify with their class. These two tax rates are depicted on the horizontal axis in Figure 2. Now, in SIE a poor voter identifies with his nation rather than with his class if $\gamma S_N - \beta d_{pN}^2 > \gamma S_P - \beta d_{pP}^2$ (where lowercase p denotes a typical poor agent¹²). If the inequality is reversed he identifies with the poor class. The equilibrium tax rate is thus a step function of $S_N - S_P$. This is illustrated in Figure 2. For $S_N - S_P$ above the $\frac{\beta}{\gamma}(d_{pN}^2 - d_{pP}^2)$ threshold, the poor identify with their nation despite the fact that the nation is cognitively more distant from them than their class. They hence choose the relatively low tax rate $t_N^*(y_p)$. For $S_N - S_P$ below the threshold, they identify with their class and choose the relatively high tax rate $t_P^*(y_p)$.

At the same time, $S_N - S_P$ is itself a function of the tax rate. A possible $S_N - S_P$ curve is depicted in Figure 2. The crucial property of the $S_N - S_P$ curve is that it is lower at $t_P^*(y_p)$ than at $t_N^*(y_p)$. The intuition is simple: a higher level of redistribution diminishes the difference in material payoffs between the rich and the poor and hence increases the status of the poor. Further, to the extent that national status is affected by material payoffs, higher levels of redistribution reduce national status in the $[t_N^*(y_p), t_P^*(y_p)]$ interval (partly due to the efficiency costs of taxation).

In equilibrium, $S_N - S_P$ is determined by the chosen tax rate while as pointed out, the tax rate depends on $S_N - S_P$. Depending on the parameters of the model a unique equilibrium or multiple ones may exist. If perceived distance from the nation is high relative to perceived distance from the poor class, and if national status at $t_P^*(y_p)$ is low relative to the status of the poor class at that tax level, then there exists an equilibrium where the poor identify with their class and the tax rate is high at $t_P^*(y_p)$. Conversely, if $d_{pN}^2 - d_{pP}^2$ is sufficiently low relative to $S_N - S_P$ at $t_N^*(y_p)$, there exists an equilibrium where the poor identify with their nation and the amount of redistribution is relatively low.

¹¹This is an equilibrium because if all the poor identify with group J and vote (sincerely) for $t_J^*(y_p)$, then no poor voter can unilaterally change the chosen tax rate, and he might as well vote for $t_J^*(y_p)$. Note also that since a single voter cannot affect the tax rate, S_N and S_P are taken as given when “choosing” the optimal identity.

¹²Recall there is no within-class heterogeneity.

As Figure 2 suggests, there are situations where two “stable” equilibria exist. To illustrate this possibility suppose the pre-tax income of the poor is $y_p = 50$, that of the rich is $y_r = 150$ and that the poor compose 70% of the population ($\lambda = 0.7$). Suppose further that the weight of group status in the utility function is $\gamma = 0.1$ and that the sensitivity of both class and national status to the material payoff dimension is $\sigma_1^P = \sigma_1^N = 1$. Then the preferred tax rate of a poor agent that identifies with his class is $t_P^* = 0.5$. If national material payoff is measured by income per capita ($\alpha = \lambda$), then the preferred tax rate of a poor agent who identifies with the nation is $t_N^* = 0.34$. This gives us the two tax rates on the horizontal axis. Consider now the difference between national and class status. If there are no exogenous factors that affect the status of either group (namely $\sigma_0^P = \sigma_0^N = 0$), and if the material payoff of the nation’s reference group is $\tilde{\pi}_{r(N)} = 100$, then $S_N - S_P = 41.3$ when $t = 0.34$ and $S_N - S_P = 20$ when $t = 0.5$. Thus, if the threshold on the vertical axis $\left[\frac{\beta}{\gamma} (d_{pN}^2 - d_{pP}^2) \right]$ lies between 20 and 41.3, two equilibria are possible.¹³ At the low tax equilibrium (with $t = 0.34$), the status of the poor class is sufficiently low to induce the poor to identify with the nation rather than with the poor even though that entails a higher cognitive cost. They thus vote for a low tax rate. But under the high tax rate ($t = 0.5$), the poor are not that far behind the rich in their standards of living and hence in their status ($S_N - S_P$ is now only 20). They now identify with the poor class and thus vote for the high tax rate.

The following proposition summarizes the main results.

Proposition 2

1. *A Social Identity Equilibrium exists.*
2. *There are generically two types of equilibria: one with relatively high levels of redistribution and class identification among the poor, and the other with relatively low levels of redistribution and national identification among the poor.*
3. *A low-tax national-identity SIE exists if:*
 - (a) *common national attributes are sufficiently salient compared to income and class-specific attributes (w_N is high and w_C and w_y are low),*
 - (b) *exogenous sources of national status are sufficiently high (σ_0^N is high, $\tilde{\pi}_{r(N)}$ is low),*

¹³For example, if $\beta = \gamma$ and $w_y = 0.03$, the threshold is approximately 27. Note that for expositional simplicity the income attribute was not normalized, and is two orders of magnitude larger than the other (binary) attributes. Hence perceived distance in this example is practically determined by income differences and the associated attention weight w_y .

(c) *exogenous sources of poor-class status are sufficiently low (σ_0^P is low).*

The reverse conditions ensure existence of a high-tax class-identity SIE.

4. *The qualitative effect of pre-tax income inequality on the equilibrium level of redistribution is ambiguous.*
5. *There are conditions such that both types of SIE exist.*

Discussion and possible interpretations

Part 3(a) of Proposition 2 has to do with the effect of the distance that citizens perceive between themselves and their nation. The lower is d_{pN} , the higher is the likelihood of a low-redistribution equilibrium, other things equal. It seems plausible to assume that perceived distance from the nation is largely due to slow-changing “fundamentals” such as the development of a common national language and culture, as opposed to local or class-specific cultures (see Weber 1976). However, as the social psychology literature suggests, perceived distances can be significantly altered by changing the relative salience of common national attributes versus class -specific attributes. Thus, a common threat to all members of the nation, salient international competition or a conflict with another nation, seem likely to make one’s membership in the nation a more salient attribute, thereby reducing d_{pN} and increasing the likelihood of a low-redistribution equilibrium. In particular, a salient national security danger is likely to enhance a feeling that “we are all in the same boat” – rich and poor alike. But a national identity means less weight on class issues and less support for redistribution. This suggests that there may be an incentive for elites to hype national threats in order to diffuse domestic claims for more redistribution, or to soften opposition for a reduction in the level of redistribution.

In a similar vein, salient hardships or disasters that disproportionately threaten the poorer segments of society, are likely to enhance class identification among them and increase demand for redistribu-

tion.^{14,15} In the longer run, factors like the transportation infrastructure and the nature of the school system – whether it fosters similarity to the nation or class distinctions – should have a crucial effect on the pattern of identification and hence on the redistributive regime.

Part 3(b) of Proposition 2 relates to the fact that group status may depend on dimensions other than the material payoffs of group members. A powerful nation for example is more likely to generate national identification among its members than a weak or a remorseful nation, other things equal. Post-WWII Germany is a case in point (see the cross country patterns in the next section). Or consider Ronald Reagan’s military build-up and rejection of *Détente*. If such policies enhanced America’s stature, then according to the model they may also help explain the popularity and political success of the Reagan tax policies even among blue collar workers. Part 3(c) of the proposition makes a complementary point regarding a strong/weak working class.

Part 4 of Proposition 2 relates to the effect of pre-tax inequality. The standard median voter result is that higher pre-tax inequality leads to more redistribution. This is not necessarily the case once social identification is allowed. The reason is that while preferred tax rates may increase with inequality for any *given* social identity, changes in inequality can lead to changes in the pattern of identification. This happens because the level of inequality affects both perceived distances and group status. Consider a drop in pre-tax inequality. This reduces perceived distance of the poor from the nation but also improves the condition of the poor relative to the rich. Thus in Figure 2, both the $\frac{\beta}{\gamma}(d_{pN}^2 - d_{pP}^2)$ threshold and the $S_N - S_P$ curve may shift down. If the shift in $S_N - S_P$ is sufficiently large relative to the other changes, the country can move from a low-tax national-identity equilibrium to a high-tax class-identity

¹⁴In this context it would be interesting to study the salience of class vs. national attributes during the 2004 and 2008 American presidential elections. Consider for example the candidates’ rhetoric. In 2004, even John Kerry’s speeches stressed the common war against terrorism: “As Americans we are absolutely united, all of us. There are no Democrats, there are no Republicans. As Americans we are united in our determination to destroy, capture, kill Osama bin Laden and all of the terrorists” (AP, Oct. 30, 2004). But in 2008, with the economic crisis deepening, even John McCain gave center stage to “Joe The Plumber”, while Barack Obama further accentuated inter-class differences: “I’m not worried about CEO’s... I’m not worried about the drug companies or the oil companies... They’ll be fine... I’m worried about the family that’s trying to figure out how they can save for their child’s college education. I’m worried about the single mom that doesn’t have health insurance. I’m worried about the guy who has worked in a plant for 20 years and suddenly sees his job shipped overseas. That’s who I’m worried about” (Obama infomercial, Oct. 29, 2008).

¹⁵This mechanism can perhaps also help understand the expansion of the welfare state following mass warfare. Scheve and Staasavage (2008) for example argue that the widely perceived disparity between the sacrifices of those who had served in the front (particularly in World War I) and those who reaped “war profits”, has led to demands for increased tax progressivity. While fairness considerations are central to their argument, such a phenomenon might partly be understood in terms of the present model. In its early stages, World War I – commonly portrayed as a threat from abroad – was accompanied by widespread national identification which seemed to swamp working class identification across Europe. But in the final stages of the war and in the years immediately following it, the rift between the poor and the profiteering rich may have become sufficiently salient to overcome – for a while – the sense of a common national fate. To quote Ferro (1973, 145) “The same resurgence of old quarrels came with the decline of *Union sacrée*: the revival of the workers’ and socialist movements, dormant since 1914, came with the changed perspectives of the war”.

equilibrium. Therefore, it is not clear that economies with higher pre-tax inequality will in general be at higher tax equilibria.¹⁶

The model thus suggests that we may observe rather different levels of redistribution among economies with similar pre-tax income distributions and similar political institutions, and it points to several important factors that can cause such differences. But the last part of Proposition 2 says that we may observe different levels of redistribution even when all these factors are held constant, as different levels of redistribution serve to reinforce the identification patterns that support them. Historical contingencies can thus have a lasting effect on the redistributive system. But in any case, empirically we should expect to find higher levels of national identification the lower is the level of redistribution, and vice versa.

Who are the nationalists?

Turning back to the model, two additional issues are worth commenting on. The first is: who are the nationalists? In the simple two-class setting considered here, the answer is rather stark: the poor.

Proposition 3 *Unless the status of the poor-class is sufficiently higher than that of the rich class, then in any SIE in which the rich identify with the nation, so do the poor. However, there exist SIE where the poor identify with the nation but the rich do not.*

Essentially, as long as there are no exogenous factors that endow the poor class with a significantly higher status than that of the rich, the poor are more likely than the rich to identify with the nation. Two factors are at work here. First, the more immediate social group the poor belong to – namely the poor class – has lower status than the immediate social group of the rich. Second, most of the members of the nation are poor, which means that poor agents are in general more similar to the national prototype than the rich are.

As we shall see in the next section, this simple result is consistent with data available from most modern economically-advanced democracies. Indeed, in these nations it seems reasonable to assume (as the model does) that the status of social classes is positively correlated with the economic conditions of these classes (see Weiss and Fershtman, 1998). It is also reasonable to assume that perceived distance from the nation is not systematically higher among the poorer segments of society.

¹⁶This is consistent with most of the empirical studies reviewed in Benabou (1996) and Alesina and Glaeser (2004). See however Milanovic (2000).

But this need not always be the case. Consider e.g. 18th and 19th century Europe, where productivity resides with the bourgeoisie but status still resides to a significant extent with the aristocracy. Further, at these early stages of industrialization much of the poor population lives in rural areas, often separated from the rest of their nation by cultural, linguistic and geographic barriers. Perceived distance from the nation is thus higher for the rural poor than for the urban middle class (Weber 1976, part I). Similar conditions might also characterize some developing countries today and colonized countries in the past, where much of the poor population inhabits remote rural areas, and where the middle class does not enjoy as high a status as it would based on its domestic economic position. Under these conditions, the urban middle class is more likely to hold a national identity than are the rural poor.¹⁷

Heterogeneity of the lower class

A final point raised by the model concerns within-class heterogeneity. This issue merits a separate study, primarily because the sources of heterogeneity may well be related to other bases of identification (e.g. ethnic groups).¹⁸ Nonetheless, the present model allows us to make the following simple point, which relates less to the identification patterns of minorities and more to those of the “majority” population.

Proposition 4 *Suppose a proportion $\mu \in (0, 0.5)$ of the poor agents possess some salient attribute x , that differentiates them from the rest of the population. Then, the equilibrium level of redistribution is weakly lower (a) the higher is μ , and (b) the more salient is attribute x compared to income and class-specific attributes.*

The intuition is as follows: since $\mu < 0.5$, the pivotal voters turn out to be the poor agents who do not possess attribute x . Now, as μ increases, these agents may dissociate themselves from their class

¹⁷To see this, consider an economy with three income levels $y_p < y_m < y_r$ and accordingly three classes. Continue to assume no within-class heterogeneity. If status is largely determined by income, then the middle class has a higher status than the poor class. Thus, the status effect still works to make the poor more likely than other classes to hold a national identity in SIE. However, middle-income agents may well be closer to the national prototype than are either the poor or the rich. Hence the distance effect works to make the middle class “more nationalistic” than either the poor or the rich (the latter group, having a high class-status, may be the least likely to hold a national identity). Such a result is even more likely if the middle class is disadvantaged on various dimensions of status (e.g. if it is deprived of political power or is threatened by other groups). Nonetheless, as common national attributes become more prevalent and salient (e.g. due to a common national language that overcomes local dialects, a road system that facilitates a perception of similarity to distant fellow nationals, etc.), the distance effect diminishes in importance (in the limit, when $w_N = 1$ all distances are zero). Now, as class status becomes more closely correlated with income, we are back to the basic result in Proposition 3, whereby the poorer segments are more likely to hold a national identity.

¹⁸Analyzing the interaction between identification patterns and the redistributive regime in this case should thus model not only the heterogeneity in attributes but also the determinants of the groups’ status. In this context one should probably also consider policies targeted at the specific groups and not just redistribution from rich to poor. For all these reasons, a full-fledged analysis of within-class heterogeneity is beyond the scope of the current paper.

– which becomes less similar to themselves – and identify with their nation. This implies a lower level of redistribution.¹⁹ Similarly, as attribute x becomes more salient relative to attributes common to all poor agents, these pivotal voters perceive themselves as more different from the poor class and may turn to national identification.

This simple point might partly help explain the shift of significant portions of the working class in Western Europe from socialist to nationalist parties (Kitschelt 1996; Ignazi 2003; Lubbers et al. 2002). As Schain et al. (2002, 11) put it, “certainly the most common explanatory factor put forward for the electoral breakthrough of the radical right are immigration and the presence of immigrants”. Such a relationship is readily interpretable in terms of Proposition 4. Immigration of foreign workers affects primarily the composition of the poorer segments of society. As a consequence, identifying oneself as part of the working class is not as self-evident for the native workers as it used to be. Thus, support for general-interest redistribution declines.²⁰ Note that this result does not hinge on any (empirically disputed) adverse effects of immigration on the pre-tax economic conditions of the natives: pre-tax incomes are held constant in Proposition 4.

Finally, part (b) of the proposition points to a possible channel that – even before taking into account ethnic identification – can relate the salience of attributes which divide the lower class to national identification and to redistributive politics.

Evidence: National Identity and Redistribution

This section seeks to uncover some of the empirical relationships between national identification and redistribution, and check whether they are consistent with the model. I examine three implications of the model:

1. Support for redistribution decreases with national identification among the non-wealthy (Proposition 1).
2. The poor are more likely than the rich to identify with their nation (Proposition 3).

¹⁹Of course, the effect of μ is even stronger if a higher proportion of x 's in the poor class lowers the status of that class.

²⁰Consistent with this interpretation, Soroka et al. (2006) find a negative relationship across OECD countries between changes in social spending and immigration flows in the 1970-1998 period. In a similar vein, Proposition 4 is consistent with the old argument that links the absence of a strong labor movement in the US to the highly heterogenous immigration that shaped the American labor force (see Lipset and Marks 2000).

3. Across democracies, there is a negative correlation between levels of national identification and levels of redistribution (Proposition 2).

I concentrate on the national-identity side of the model and not the class-identity side for two reasons. First, in contrast with data on national identification, data on class identification are hard to obtain. While many surveys (e.g. the GSS, Eurobarometer and World Values Survey) ask respondents what social class they *belong* to, this is at best a self-categorization question, akin to asking “which nation do you belong to?”. It tells us little about identification as defined in the model.²¹ Second, the model’s predictions with respect to class identification seem less contentious. It would not be too surprising to find that low income individuals with a strong “working class” identity desire more redistribution than their comrades with weak class identification. Similarly, it would hardly be ground-breaking to discover that class identification and class voting is more common in Western Europe, where there are higher levels of redistribution, than in the US (see Evans 2000; Lipset and Marks 2000). The model’s implications regarding national identification however are more novel and beg empirical investigation.

I use both micro and cross-country data. The micro data come from the World Values Survey (WVS, waves 1-3) and the International Social Survey Program (ISSP): National Identity, 1995. Each survey covers more than twenty democracies during the 1990’s. The primary measure of the extent of redistribution at the national level comes from the Luxemburg Income Study (LIS). I limit the analysis to democracies, defined as countries with a Polity IV combined score of at least 6 (following the Polity coders’ recommendation).

As noted in previous sections, the model’s assumptions appear better suited to industrialized, well-established democracies. For example, the model assumes that nation and (income-based) social class form the major social groups individuals identify with. But, especially in less advanced economies, the more prominent social groups might be based on region, dialect, religion or caste. The model also assumes that redistributive policies reflect the policy preferences of the majority of the population. But in countries that have only recently turned democratic, this may not be the case. To help evaluate whether the model offers a better account for some countries than for others, the individual-level analyses are performed country-by-country, and for a broad set of countries. Similarly, I report cross-country data both for well-established democracies and for recently democratized countries.

²¹Indeed the class question often does not even yield a good measure of self-categorization since most surveys do not allow the respondent the option of not belonging to *any* class.

Preferences for redistribution by income and national identification

The definition of social identity requires that an agent care about the status of his group. In experimental studies, such preferences can be directly inferred from behavior. In larger empirical studies, we have to rely on survey questions. Ellemers et al. (1999) show that ingroup favoritism in allocation decisions is captured by questions on “commitment to the group”. These consist of agreement to such statements as “I would like to continue working with my group” or “I dislike being a member of my group”. Consistent with this finding, results from an experimental study using natural groups in a political-economy game, show that willingness to forego material payoffs in order to benefit the group is best correlated with responses to the items “I am proud to be a member of my group” and “when someone criticizes my group it feels like a personal insult” (Klor and Shayo 2008). In both studies, ingroup favoritism is *not* captured by mere self-categorization statements such as “I am similar to other members of my group”. Now, the WVS contains a question asking: “How proud are you to be [e.g. French]?” answered on a scale of 1 to 4 (“very proud”, “quite proud”, “not very proud” and “not at all proud”). This question seems reasonably well suited to capture the notion of national identity.²² As mentioned above, no such question exists with respect to class identity.

The WVS also asks respondents to rank on a scale from 1 to 10 whether “incomes should be made more equal” or whether “we need larger income differences as incentives for individual effort”. This question captures preferences over the type of policies studied in the model, namely ones that make incomes more equal (as opposed, for example, to policies designed to secure a minimal standard of living for the poor). These data can be used to examine the first implication of the model. The analysis is performed only on those surveys in which detailed data on respondents’ income are retrievable (see Appendix C).

Figure 3 presents nonparametric estimates of the expected support for redistribution as a function of log household income. Panel a shows advanced economies (countries with real GDP per capita at least 50% that of the US) and panel b shows less advanced economies. In each survey, the population is divided into two groups by level of pride in one’s nation. A regression function is then estimated for each of the two groups, using Fan (1992) locally weighted regressions. The first group (shown by the solid lines) includes those professing to be “very proud” to be members of their nation. The other group

²²The ISSP provides better measures of national identity, and will be used extensively below, but it does not contain data on attitudes toward redistribution.

(dashed lines) includes the rest.

The first thing to note is that *within* each group, support for redistribution tends to decrease with income in most surveys. The striking result however is that in most advanced economies, people who identify more strongly with their nation prefer a lower level of redistribution than people with low levels of identification and similar income. This pattern seems to hold in Austria, Britain, Canada, Finland, Germany (East and West), Japan, the Netherlands, Sweden, Switzerland, Taiwan and the US. The only advanced economies where this relationship is not apparent are Belgium, Italy and Spain.

Outside the industrial world, the evidence is much more mixed. There is often no clear difference between the two groups in the support for redistribution. One possibility is that in less economically advanced countries, social groups that are left out of the present model – such as the region, the religious community or the caste – play a prominent role. This might also explain the absence of a clear effect in Belgium, Italy and Spain. If the predominant immediate social group is not the class but, say, the region, then it is not clear that a shift to a national identity would in general imply less support for redistribution. Catalonia for example is a relatively rich region. Shifting from a Catalan to a national Spanish identity might therefore *increase* support for redistribution.²³ An alternative conjecture is that the difference in the patterns observed in advanced and in less advanced economies has to do with differences in the party system. Exploring these possibilities is a matter for future research.²⁴ The main finding at this stage is that in industrialized democracies, national identification tends to be associated with reduced support for redistribution (for a given income).

Finally, although it is impossible to assert that these surveys contain representative samples of the rich, it is interesting that there appears to be little evidence that national identity systematically enhances support for redistribution among the rich.²⁵

²³The WVS data from Spain are not conclusive regarding this specific possibility. In the subsample of the 1990 survey conducted in Catalonia (N=380 with the requisite data), pride in the nation is indeed strongly and *positively* associated with support for redistribution, while the association is negative in the rest of Spain. But in the 1996 Catalan subsample (N=102 with the requisite data), the association is weak and not robust to including various demographic controls. The data are similarly limited and inconclusive regarding Italy's northern regions. See also the discussion of Figure 7 below.

²⁴It might be noted however, that the (within-country) estimated effect of national identification on preferences for redistribution does not seem to be associated (across countries) with some prominent features of the party and electoral systems. This effect is not significantly associated with the effective number of electoral parties (Laakso-Taagepera index), the type of the electoral system (majoritarian, proportional, multi-tier or mixed) or the type of executive (parliamentary democracy, mixed democracy or presidential democracy). See Golder (2005) for data and definitions. It is also not significantly associated with Lijphart's (1999, Table 5.3) index of the number of issue dimensions of partisan conflict. The effect of national identification is somewhat more strongly correlated with ethnic fractionalization (Fearon 2003) and with GDP per-capita ($\rho = 0.25$ and -0.34 , respectively; the correlation with effective number of parties is 0.1 and with number of issue dimensions 0.09). This could be consistent with the conjecture that prominent non-class cleavages can make the assumptions made in the model inadequate, but obviously much further research is required.

²⁵Out of the eighteen surveys of advanced economies, Figure 3 suggests such a pattern in no more than seven surveys

Another way of looking at these data is presented in Table 1. The table reports OLS regressions of the support for redistribution on log income and dummies for level of national pride, controlling for sex, age, years of education and log household size.²⁶ A separate regression is reported for each survey. The results show a negative relationship between income and preferences for redistribution in almost all countries. Further, people who profess to be “very proud” of being members of their nation appear to support redistribution significantly less than people who profess to be “not proud” or “not at all proud”, controlling for income and schooling. The point estimates are negative in 26 out of 30 available surveys – and appear very large when compared to the effect of income. If taken literally, the point estimates imply that moving from not being proud to being very proud of one’s nation is equivalent in terms of attitudes towards redistribution, to having one’s household income multiplied by a factor of between 1.5 and 3 in most western democracies. The estimated effect is exceptionally large in the two surveys from the United States. Consistent with the non-parametric estimations, the relationship between national pride and preferences for redistribution is statistically significant in most industrialized countries, but weaker in the less advanced countries. Finally, the third column of Table 1 shows that, as expected, the effect of being “quite proud” is generally smaller than that of being “very proud” – although it retains a negative sign in almost all surveys.

National identification by income

The model suggests that low income individuals – having less to be proud of in their immediate social group compared to the rich and being more similar to the representative agent in their nation – will in general tend to identify more strongly with the nation. I now check whether this claim is consistent with available data. I use detailed micro data from the ISSP 1995 National Identity module that contains surveys from 22 democracies. Results from the WVS – using the cruder measure of national identity employed in the previous subsection – are qualitatively similar. The ISSP includes the following six items which seem to capture our notion of national identity (see the discussion in the previous subsection).

(Italy, Spain 90, Sweden, Switzerland, USA 90 and possibly Finland and West Germany). Among less advanced economies, such a pattern may be observed in Brazil, Bulgaria, India and Venezuela.

²⁶The results are very similar without controlling for these additional variables or when using ordered probits. I report OLS estimates for ease of interpretation. I refrain from pooling the data both to allow a comparison of patterns between individual countries and because the variables are not equivalent across surveys. In particular, the attitude to redistribution is stated in reference to the local level of income inequality. Finally, to make sure that the national pride dummies are not picking up some non-linear effect of income, I repeated the estimations with non-linear terms for income up to a third order polynomial. The estimated coefficients on the national pride variables were unaffected.

- How much do you agree or disagree with the following statements? [1. Agree strongly; 2. Agree; 3. Neither agree nor disagree; 4. Disagree; 5. Disagree strongly. “R”=Respondent]
1. I would rather be a citizen of (R’s country) than of any other country in the world.
 2. There are some things about (R’s country) today that make me feel ashamed of (R’s country).
 3. The world would be a better place if people from other countries were more like the people in (R’s country).
 4. Generally (R’s country) is a better country than most other countries.
 5. When my country does well in international sports, it makes me proud to be citizen of (R’s country).
 6. (R’s country) should follow its own interests, even if this leads to conflicts with other nations.

While all items gauge feelings of national pride, items 2 and 5 are conditional on transitory conditions (“things about my country *today*”), and may thus be less suitable to capture national identification. The estimated associations of each of these items with income are described in footnote 27 below. As a way of summarizing the data, I do the following. First, I construct a national identity scale from these six items. Answers to each item are scored from 0 to 4, with a higher score representing the more nationalist answer, and the items are then summed up with equal weights. The resulting scale ($\alpha = 0.61$) takes values in $\{0, 1, 2, \dots, 24\}$. Second, I estimate a linear regression model using this scale as the dependant variable and log income as explanatory variable, controlling for log household size, sex and age. The results are presented in Table 2. The data seem overwhelmingly supportive of the notion that poorer people tend to identify more strongly with their nation. A negative relationship between income and the national identification scale is apparent in all countries surveyed. The relationship generally holds also when controlling for years of education (Column 2). The results are even stronger when using a four-item scale that does not include items 2 and 5 to measure national identification (not shown).²⁷

²⁷A more detailed analysis revealed similar patterns. Specifically, for each country and each of the six national pride items, an ordered probit model was estimated with the national identity variable as the dependent variable and with log of income, log of household size, sex and age as independent variables. This procedure was repeated with controls for years of schooling. The results were as follows. For items 3, 4 and 6, the estimated coefficient on log income is negative in all the surveys: the higher the income, the lower is the extent of national identification. This effect is statistically significant in between 17 to 19 of the 22 surveys. This pattern generally holds also when controlling for years of education. For item 1 the estimated coefficient on income is generally negative but is statistically significant in only 13 of the 22 surveys. Finally, items 2 (shame) and 5 (sports) indeed show a weaker relationship to income. Item 5 gets the expected sign in almost all countries, but the effect is statistically significant in only 7 of them. Item 2 has the expected sign in only about half the surveys, and is statistically significant in only 4 surveys (all the significant coefficients have the expected sign, though: richer people feel more ashamed of their country).

The cross country patterns

Finally, we come to the overall levels of redistribution and national identification. According to the model, in equilibrium we should expect high levels of redistribution to be accompanied by relatively low levels of national identification and vice versa. Since both these variables are endogenous, this subsection only examines correlations.

To measure the extent of actual redistribution as defined by the model, we need data on both pre-tax and post-tax income. The best available data that are reasonably comparable across countries are the LIS data compiled by Milanovic (2000). For each country participating in the LIS, these include the distributions of household per-capita *factor* income and *disposable* income. Factor income is defined as pre-transfer and pre-tax income, and includes wages, income from self-employment, income from ownership of physical and financial capital, and gifts. Disposable income is equal to factor income plus all government cash transfers minus direct personal taxes and mandatory employee contributions. As a measure of the extent of redistribution to the poor class, I use the “share gain” of the bottom quintile, defined as the difference between the share of the bottom quintile in factor and disposable income. For example, if the bottom quintile receives 1% of total factor income, while the same people receive 10% of total disposable income, the share gain is 9 percentage points.²⁸ I match these data with measures of national identification from the ISSP 1995 and the WVS, using the closest available LIS data point. Note that since individual income data is no longer required, we can use the entire set of democracies covered by the WVS between 1981 and 1998.

Figure 4 presents the association between redistribution levels and national identification using the ISSP 1995. The horizontal axis measures the median of the six-item national identity scale described above. On the vertical axis is the share gain of the bottom quintile. Panel a presents all democracies participating in the ISSP with available data on the share gain. Panel b concentrates on established democracies, defined as democracies with at least ten years since the last substantive change in authority characteristics (defined as a 3-point change in the Polity score). This excludes countries that are less likely to have reached equilibrium by the time of these surveys (in this case the transition countries of Eastern Europe). Both panels reveal a striking negative relationship. The association is particularly clean when we focus only on the long established western democracies, with Germany exhibiting very

²⁸The share gain of the bottom quintile offers a sharp measure of redistribution to the lower class. Results are more noisy – but qualitatively similar – when using the share gain of the bottom *half*. See the discussion of Figure 8 below for yet another measure of redistribution.

low national pride and very high levels of redistribution, and the US among the proudest and least redistributive countries. To get a sense of the strength of the association, the R^2 from regressing the share-gain on national identification alone is 0.49 in the entire sample, and 0.72 in the sample without the transition economies.

Figure 5 repeats this exercise with the larger set of surveys available from the WVS. On the horizontal axis we now have the estimated fraction of the population in each country professing the highest level of national pride. The pattern is again extraordinarily clear, especially when focusing on established democracies. The R^2 is 0.6 for established democracies and 0.25 for the entire sample. It is important to note that the relationship is not simply driven by cross-Atlantic differences, and is remarkably strong *within* western Europe. It is also noteworthy that this pattern holds in spite of the commonly held view that the welfare state makes Europeans proud of their country: the more redistributive countries are actually characterized by *less* national pride.²⁹

Most of the negative relationship comes from cross country variation and not variation within countries over time. Movements within countries – in both dimensions – are very small relative to the differences between countries. This suggests rather stable equilibria. To see this more clearly, Figure 6 presents the same data as in Figure 5b separately for each country on which we have more than one observation. It may be interesting to note that most of the movements accord well with the model. In particular consider the movements that seem to have occurred between the early 80’s and the mid 90’s in Denmark, the Netherlands, Norway and Sweden. In all these countries, one observes an apparent shift to lower levels of redistribution coupled with higher levels of national identification. The reverse seems to have happened in Canada and Spain (and perhaps also in France and Germany) where levels of redistribution increased and levels of national identification decreased during the 1990’s. Why these changes might have happened is a matter for further research. Indeed some of these “changes” may be measurement noise. The finding to emphasize is the cross country pattern.

Another way of looking at the data is to add some control for ethnic diversity, which has long been implicated in reducing the taste for redistribution. Figure 7 breaks the data in Figure 5b by the proportion of ethnic minorities in the total population (the classification of countries is identical when using an ethnic fractionalization index, see footnote 30 below). Specifically, panel a shows countries

²⁹Recall that the survey questions used are not using the word “nation” which may invoke certain connotations, but ask “How proud are you to be French?” (WVS) or whether a respondent “would rather be a citizen of Sweden than of any other country in the world” (ISSP).

where, according to Fearon's (2003) data, the largest ethnic group made up at least 75% of the country population in the early 1990s. Panel b shows countries where the largest ethnic group made up less than 75% of the population.³⁰ As the Figure shows, a negative relationship between national identification and redistribution exists both across relatively homogeneous countries and across heterogeneous ones.

But Figure 7 suggests another interesting pattern. Ethnic heterogeneity at the country level does not seem to be associated with reduced redistribution in this sample. Belgium and Spain are highly ethnically diverse, yet Spain's level of redistribution is about average while Belgium's is the highest in the sample. Similarly, Australia, Finland and (to a lesser extent) the UK are relatively homogeneous but have comparatively low levels of redistribution. This seems consistent with Proposition 4 which focuses on diversity *concentrated in the lower class*. This is a reasonable characterization of ethnic diversity in the US, where the Black (12%) and Hispanic (13%) minorities are concentrated in the lower class. But it does not fit the structure of ethnic diversity in Belgium (58% Flemming, 31% Walloon) or in Spain (68% Castilian, 17% Catalan, 6% Galician, 6% Basque).³¹ To further investigate the effects of lower-class diversity, more systematic data on such diversity is required. Again, the main finding at this point is the overall correlation between national identification and redistribution.

As a final robustness check, Figure 8 looks at an indirect measure of redistribution, namely social welfare expenditure as percentage of GDP (OECD data). While this is a rather crude measure, a negative relationship is apparent using both measures of national identification. It is noteworthy that contrary to social welfare expenditure, *military* expenditure as a share of GDP is not negatively related to measures of national identification (in fact the correlation is slightly positive using the WVS data).

It is of course possible that the cross country correlation is driven by some other factors that affect both national identification and levels of redistribution, without the direct link between the two postulated by the model. However, the micro level results presented above somewhat limit the relevance of this possibility. As we have seen, the relationship between national identification and redistribution also holds at the individual level: within almost every western democracy, people who identify with their nation support less redistribution than people who do not. And in almost every country, lower income

³⁰The results are identical with a 70% or an 80% threshold, or with any ethnic fractionalization (Fearon 2003) threshold between 0.33 and 0.49 (or indeed with thresholds based on the cultural fractionalization index proposed by Fearon or the index based on the Soviet Atlas data). I present the results using the share of minorities for consistency with the measure used in Proposition 4.

³¹To a certain extent, ethnic diversity concentrated in the lower class could also characterize Australia (7% Asians and 1.4% Aborigines) and the UK (3% Asians and 2% Afro-Caribbeans), which have relatively low levels of redistribution, but probably not Canada (where the French-speakers form the main minority) and Finland.

is associated with more national identification. If the general-interest long-run redistributive system reflects voters' preferences, then it would indeed be puzzling had the cross country patterns not reflected the micro results. Overall then, in advanced and well-established democracies, the data are remarkably consistent with the model.

Conclusion

This paper attempted to employ robust regularities observed by social psychologists and experimental economists in order to enhance our understanding of the complex processes of social identification and their interactions with economic and political variables. In particular, the paper applied these regularities to study the interactions between national and class identification, income inequality and political preferences.

The application to redistribution presented here focused on the endogeneity of group status. Since policies affect group status, political preferences may reflect identity concerns and not just economic self-interest. Thus, identifying with the lower class increases support for redistribution while identifying with the nation tends to reduce it. At the same time, the sociopolitical environment shapes the patterns of identification. In particular, low redistribution tends to make identifying with the lower class less appealing and can encourage identification with the nation. Both these channels generate a negative relationship between levels of redistribution and levels of national identification. The model further allows us to analyze the likely effects of national threats and ingroup heterogeneity on redistributive policies. It also points out that increased income inequality does not necessarily lead to more demand for redistribution, as it can shift the poor away from class identification.

Data from a large set of economically advanced democracies suggest that, for given income levels, national identification is associated with reduced support for income equalization. At the same time, low income is associated with national identification, even when controlling for years of schooling. These individual level effects are in turn consistent with a remarkable cross-country relationship between income redistribution and national identification. This relationship is present in several data sources and is driven not just by the cross-Atlantic divide, but also by differences within Europe.

The analysis offered here can be extended in several directions. One is to endogenize the "supply" of perceived distance. In particular, it seems crucial to examine politicians' incentives to promote,

say, a national language and culture versus advancing inter-class differences (or, in the shorter run, to take actions that change the salience of national-specific or class-specific attributes). Another extension concerns the set of social categories examined – with ethnic identification being a particularly important subject.

But while this paper focused on redistributive politics in democracies, the general framework developed here can, I believe, be fruitfully applied to a broad range of questions (see e.g. Penn 2008). Given the pervasiveness of identity issues in the political arena – from voting and partisanship to ethnic violence – it seems important to have a unified theory that can be used to study both the effects of group identification on political behavior and the endogenous formation of identification patterns. This paper offers a step towards such a theory.

REFERENCES

- Abrams, Dominic, Margaret Wetherell, Sandra Cochrane, Michael Hogg and John Turner. 1990. Knowing what to think by knowing who you are: Self-categorization and the nature of norm formation, conformity and group polarization. *British Journal of Social Psychology* 29: 97-119.
- Akerlof, George A. and Rachel E. Kranton. 2000. Economics and Identity. *Quarterly Journal of Economics* 115: 715-753.
- Alesina, Alberto, Reza Baqir and William Easterly. 1999. Public Goods and Ethnic Divisions. *Quarterly Journal of Economics*, 114, 1243–1284.
- Alesina, Alberto and Edward L. Glaeser. 2004. *Fighting poverty in the US and Europe: a world of difference*. Oxford University Press.
- Bartels, Larry. 2000. Partisanship and voting behavior, 1952-1996. *American Journal of Political Science* 44: 35-50.
- Bartels Larry. 2002. Beyond the running tally: partisan bias in political perceptions. *Political Behavior* 24: 117–150.
- Bawn, Kathleen. 1999. Constructing “Us”: Ideology, Coalition Politics, and False Consciousness. *American Journal of Political Science* 43: 303-34.
- Beck, Paul, Russell Dalton, Steven Greene and Robert Huckfeldt. 2002. The Social Calculus of Voting: Interpersonal, Media, and Organizational Influences on Presidential Choices. *American Political Science Review* 96: 57-73.
- Benabou, Roland. 1996. Inequality and growth. In Bernanke, B. and J. Rotemberg, eds. *NBER Macroeconomics Annual 1996*. Cambridge: MIT Press.
- Benabou, Roland. 2000. Unequal Societies: Income Distribution and the Social Contract. *The American Economic Review* 90: 96-129.
- Benabou, Roland and Efe Ok. 2001. Social Mobility and the Demand for Redistribution: The POUM Hypothesis. *Quarterly Journal of Economics* 116, 447–87.
- Benabou, Roland and Jean Tirole. 2006. Belief in a Just World and Redistributive Politics. *The Quarterly Journal of Economics* 121: 699-746.

- Bernhard, Helen, Urs Fischbacher and Ernst Fehr. 2006. Parochial altruism in humans. *Nature* 442: 912-915.
- Bettencourt, Ann, Kelly Charlton, Nancy Dorr and Deborah Hume. 2001. Status differences and in-group bias: A meta-analytic examination of the effects of status stability, status legitimacy, and group permeability. *Psychological Bulletin* 127: 520-542.
- Boen, Filip, Norbert Vanbeselaere and Jos Feys. 2002. Behavioral consequences of fluctuating group success: An Internet study of soccer-team fans. *Journal of Social Psychology* 142: 769-781.
- Bolton, Gary and Axel Ockenfels. 2000. ERC: A Theory of Equity, Reciprocity, and Competition. *The American Economic Review* 90: 166-193.
- Bolton, Patrick and Gerard Roland. 1997. The Breakup of Nations: A Political Economy Analysis. *The Quarterly Journal of Economics* 112: 1057-90.
- Bornstein, Gary. 2003. Intergroup conflict: Individual, group, and collective interests. *Personality and Social Psychology Review* 7: 129-145.
- Bornstein, Gary, and Ben Yossef, Meyrav. 1994. Cooperation in intergroup and single-group social dilemmas. *Journal of Experimental Social Psychology* 30: 52-67.
- Bourhis, Richard and Andre Gagnon. 2001. Social orientations in the minimal group paradigm. In R. Brown and S. Gaertner, eds., *Intergroup processes: Blackwell handbook in social psychology* (Vol. 4), Oxford, UK: Blackwell, 89-111.
- Brewer, Marilynn. 1979. In-group bias in the minimal group situation: A cognitive-motivational analysis. *Psychological Bulletin* 86: 307-324.
- Brewer, Marilynn and Roderick Kramer. 1986. Choice behavior in social dilemmas: Effects of social identity, group size, and decision framing. *Journal of Personality and Social Psychology*, 3, 543-549.
- Campbell, Angus, Philip Converse, Warren Miller and Donald Stokes. 1960. *The American Voter*. New York: Wiley.
- Charness, Gary, Luca Rigotti and Aldo Rustichini. 2007. Individual Behavior and Group Membership. *American Economic Review* 97: 1340-1352.
- Chen, Yan and Xin Li. 2008. Group Identity and Social Preferences. *American Economic Review*, forthcoming.
- Cherry, T. L., Kroll, S. and Shogren, J. F. 2005. The Impact of endowment Heterogeneity and Origin on Public Good Contributions: Evidence from the Lab. *Journal of Economic Behavior and Organization*. 57: 357-365.
- Cialdini, Robert, Richard Borden, Avril Thorne, Marcus Walker, Stephen Freeman and Lloyd Reynolds Sloan. 1976. Basking in reflected glory: Three (football) field studies. *Journal of Personality and Social Psychology* 34: 366-375.
- Cialdini, Robert and Noah Goldstein. 2004. Social Influence: Compliance and Conformity. *Annual Review of Psychology*, 55, 591-621.
- Conover, Pamela. 1984. The Influence of Group Identifications on Political Perception and Evaluation. *Journal of Politics* 46: 760-785.
- Costa, Dora and Matthew Kahn. 2003. Cowards and Heroes: Group Loyalty in the American Civil War. *The Quarterly Journal of Economics* 118: 519 - 548.
- De-Cremer, David and Mark van-Vugt. 1999. Social identification effects in social dilemmas: a transformation of motives. *European Journal of Social Psychology* 29: 871-893.
- Dickson, Eric and Kenneth Scheve. 2006. Social Identity, Political Speech, and Electoral Competition. *Journal of Theoretical Politics* 18: 5-39.
- Eckel, Catherine C. and Philip J. Grossman. 2005. Managing Diversity by Creating Team Identity. *Journal of Economic Behavior and Organization* 58: 371-392.

- Ellemers, Naomi, Bert Doosje, Ad Van Knippenberg and Henk Wilke. 1992. Status protection in high status minority groups. *European Journal of Social Psychology* 22: 123–140.
- Ellemers, Naomi, Ad Van Knippenberg, Nanne de-Vries and Henk Wilke. 1988. Social identification and permeability of group boundaries. *European Journal of Social Psychology* 18: 497–513.
- Ellemers, Naomi, Paulien Kortekaas and Jaap Ouwerkerk. 1999. Self-categorisation, commitment to the group and group self-esteem as related but distinct aspects of social identity. *European Journal of Social Psychology* 29: 371-389.
- Evans, Geoffrey. 2000. The Continued Significance of Class Voting. *Annual Review of Political Science* 3: 401-417.
- Fan, Jianqing. 1992. Design-adaptive nonparametric regression. *Journal of the American Statistical Association* 87: 998-1004.
- Fearon, James. 2003. Ethnic Structure and Cultural Diversity by Country. *Journal of Economic Growth* 8: 195–222.
- Fehr, Ernst and Klaus Schmidt. 1999. A Theory of Fairness, Competition, and Cooperation. *Quarterly Journal of Economics* 114: 817-868.
- Ferro, Marc. 1973. *The Great War: 1914-1918*. London: Routledge & Kegan Paul.
- Fowler, James and Cindy Kam. 2007. Beyond the Self: Social Identity, Altruism, and Political Participation. *Journal of Politics* 69: 813-827.
- Frank, Thomas. 2004. *What's the Matter with Kansas?: How Conservatives Won the Heart of America*. New York : Metropolitan Books.
- Gärdenfors, P. (2000). *Conceptual spaces: The geometry of thought*. Cambridge, MA: MIT Press.
- Glaeser, Edward and Bryce Ward. 2006. Myths and Realities of American Political Geography. *Journal of Economic Perspectives* 20: 119-144.
- Goette, Lorenz , David Huffman and Stephen Meier. 2006. The Impact of Group Membership on Cooperation and Norm Enforcement: Evidence using Random Assignment to Real Social Groups. IZA Discussion Paper No. 2020.
- Golder, Matt. 2005. Democratic Electoral Systems Around the World, 1946-2000. *Electoral Studies* 24: 103-121.
- Goren P. 2005. Party identification and core political values. *American Journal of Political Science* 49: 881–896.
- Guimond, Serge, Stephane Dif and Annabelle Aupy. 2002. Social identity, relative group status and intergroup attitudes: when favourable outcomes change intergroup relations ... for the worse. *European Journal of Social Psychology* 32: 739-760.
- Hogg, Michael A, Hains, Sarah C. 1996. Intergroup relations and group solidarity: Effects of group identification and social beliefs on depersonalized attraction. *Journal of Personality and Social Psychology* 70: 295–309.
- Ignazi, Piero. 2003. *Extreme right parties in Western Europe*. Oxford University Press.
- Inglehart, R., et al. 2000. *World Values Surveys and European Values Surveys, 1981-1984, 1990-1993 and 1995-1997*. ICPSR version. Ann Arbor, MI: Institute for Social Research.
- International Social Survey Program (ISSP): National Identity. 1995. ICPSR release.1998. Köln, Germany: Zentralarchiv fuer Empirische Sozialforschung [producer]/Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributors].
- Kitschelt, Herbert. 1996. *The Radical Right in Western Europe*. Ann Arbor: The University of Michigan Press.
- Klor, Esteban and Moses Shayo. 2008. *Social Identity and Preferences over Redistribution*. Mimeo, The Hebrew University of Jerusalem.

- Kramer, Roderick and Marilyn Brewer. 1984. Effects of group identity on resource use in a simulated commons dilemma. *Journal of Personality and Social Psychology* 46: 1044–1057.
- Kramer, Roderick and Marilyn Brewer. 1986. Social group identity and the emergence of cooperation in resource conservation dilemmas. In H. Wilke, D. Messick, and C. Rutte, eds. *Experimental social dilemmas*. Frankfurt am Main, Germany: Verlag Peter Lang, pp. 177–203.
- Layman, Geoffrey and Thomas Carsey. 2002. Party polarization and party structuring of policy attitudes: a comparison of three NES panel studies. *Political Behavior* 24: 199–236.
- Lazarsfeld, Paul F., Bernard Berelson and Hazel Gaudet. 1948. *The People's Choice*, New York: Columbia University Press.
- Ledyard, John. 1995. Public goods: a survey of experimental research. In: Roth, A. and J. Kagel, eds., *The Handbook of Experimental Economics*. Princeton University Press, Princeton: 111–194.
- Lee, Woojin and John Roemer. 2006. “Racism and redistribution in the United States: A solution to the problem of American exceptionalism”. *Journal of Public Economics* 90: 1027–1052.
- Lijphart, Arend. 1999. *Patterns of Democracy. Government Forms and Performance in Thirty-Six Countries*. New Haven: Yale University Press.
- Loewenstein, George and Erik Angner. 2002. Predicting and indulging changing preferences. In G. Loewenstein, D. Read and R. Baumeister, eds., *Time and Decision: Economic and Psychological Perspectives on Intertemporal Choice*. New York: Russell Sage Foundation Press.
- Loewenstein, George, Ted O'Donoghue and Matthew Rabin. 2003. Projection Bias In Predicting Future Utility. *Quarterly Journal of Economics* 118: 1209–1248.
- Lubbers, Marcel, Mirove Gijssberts and Peer Scheepers. 2002. Extreme Right-Wing Voting in Western Europe. *European Journal of Political Research* 41: 345–378.
- Luttmer, Erzo F. P. 2001. Group loyalty and the taste for redistribution. *Journal of Political Economy* 109: 500–528.
- MacKie, Dian, Cecilia Gastardo-Conaco and John J. Skelly. 1992. Knowledge of the advocated position and the processing of in-group and out-group persuasive messages. *Personality and Social Psychology Bulletin* 18: 145–151.
- MacKie, Diane, Leila Worth and Arlene Asuncion. 1990. Processing of persuasive in-group messages. *Journal of Personality and Social Psychology* 58: 812–822.
- Mackie, Diane and Crystal Wright. 2001. Social Influence in an Intergroup Context. in Brown R. and Gaertner S.L., eds. *Blackwell Handbook of Social Psychology: Intergroup Processes*: 281–300.
- Mael, Fred and Blake Ashforth. 1992. Alumni and their alma mater: A partial test of the reformulated model of organizational identification. *Journal of Organizational Behavior* 13: 103–123.
- Meltzer, Allan and Scott Richard. 1981. A Rational Theory of the Size of Government. *Journal of Political Economy*, 89(5), 914–927.
- Milanovic, Branko. 2000. The Median-Voter Hypothesis, Income Inequality, and Income Redistribution: An Empirical Test with the Required Data. *European Journal of Political Economy* 16: 367–410.
- Miller, Arthur, Christopher Wlezien and Anne Hildreth. 1991. A Reference Group Theory of Partisan Coalitions. *Journal of Politics* 53: 1134–1149.
- Miller, David. 1995. *On Nationality*. Oxford: Clarendon Press.
- Miller, Warren. 1991. Party identification, realignment, and party voting: Back to basics. *American Political Science Review* 85: 557–568.
- Nosofsky, Robert M. 1986. Attention, similarity and the identification-categorization relationship. *Journal of Experimental Psychology: General* 115: 39–57.

- Nosofsky, Robert M. 1992. Similarity scaling and cognitive process models. *Annual review of Psychology* 43: 25-53.
- OECD 2004, Social Expenditure database (SOCX), 1980-2001.
- Orbell, John, Alphons Van-de-Kragt and Robyn Dawes. 1988. Explaining discussion-induced cooperation. *Journal of Personality and Social Psychology*. 54, 811- 819.
- Penn, Elizabeth Maggie. 2008. Citizenship versus Ethnicity: The Role of Institutions in Shaping Identity Choice. *Journal of Politics* 70: 956-973.
- Piketty, Thomas. 1995. Social Mobility and Redistributive Politics. *Quarterly Journal of Economics* 110: 551-584.
- Polzer, Jeffrey, Katherine Stewart, and Jessica Simmons. 1999. A Social Categorization Explanation for Framing Effects in Nested Social Dilemmas. *Organizational Behavior and Human Decision Processes* 79: 154-178.
- Persson, Torsten and Guido Tabellini. 2003. *The Economic Effects of Constitutions*. Cambridge: MIT Press.
- Roccas, Sonia. 2003. The effects of status on identification with multiple groups. *European Journal of Social Psychology* 33: 351-366.
- Roemer, John. 1998. Why the Poor Do Not Expropriate the Rich: an Old Argument in New Garb. *Journal of Public Economics* 70: 399-424.
- Roemer, John and Karine Van der Straeten. 2005. "Xenophobia and Distribution in France: A Politico-Economic Analysis". *Journal of Economics* 86, 95-144.
- Roemer, John and Karine Van der Straeten. 2006. "The Political Economy of Xenophobia and Distribution: The Case of Denmark". *Scandinavian Journal of Economics* 108: 251-277.
- Romer, Thomas. 1975. Individual Welfare, Majority Voting, and the Properties of a Linear Income Tax. *Journal of Public Economics* 4: 163-85.
- Schain, Martin, Aristide Zolberg and Patrick Hossay, eds. 2002. *Shadows over Europe: The Development and Impact of the Extreme Right in Western Europe*, New York: Palgrave.
- Scheve, Kenneth and David Staasavage. 2008. *The Conscription of Wealth: Mass Warfare and the Demand for Progressive Taxation*. Mimeo, Yale University.
- Shayo, Moses. 2007. "A Theory of Social Identity with an Application to Redistribution". Mimeo, The Hebrew University of Jerusalem.
- Soroka, Stuart, Keith Banting and Richard Johnston. 2006. Immigration and Redistribution in a Global Era, in Pranab Bardhan, Samuel Bowles and Michael Wallerstein, eds. *Globalization and Egalitarian Redistribution*, New York: Russell Sage Foundation, 261-288.
- Spears, Russell, Tom Postmes, Martin Lea and Susan Watt. 2001. A SIDE view of social influence. in Williams, Kipling D and Forgas, Joseph P. , eds. *Social Influence: Direct and Indirect Processes*. Philadelphia/Hove, UK: Psychology Press, : 331–50.
- Tajfel, Henri. 1970. "Experiments in intergroup discrimination". *Scientific American*, 223, 96-102. Reprinted in Hogg, MA and Abrams D., eds., *Intergroup Relations*, Ann Arbor: Psychology Press, 2001.
- Tajfel, Henri, Billig, MG, Bundy, RP, Flament, Claude. 1971. "Social categorization and intergroup behavior". *European Journal of Social Psychology*, 1, 149–178.
- Tajfel, Henri and John Turner. 1986. The social identity theory of intergroup behavior. In Worchel S. and Austin W. eds. *Psychology of Intergroup Relations*, Nelson Hall: Chicago, 7-24.
- Tamir, Yael. 1993. *Liberal Nationalism*. Princeton: Princeton University Press.
- Turner, John, Michael Hogg, Penelope Oakes, Stephen Reicher and Margaret Wetherell. 1987. *Rediscovering the Social Group a Self categorization Theory*, Blackwell, Oxford.

Weber Eugen. 1976. Peasants into Frenchmen: The Modernization of Rural France, 1870-1914. Stanford University Press.

Weiss, Yoram and Chaim Fershtman. 1998. Social status and economic performance: A survey. *European Economic Review* 42: 801-820.

Wit, Arjaan and Henk Wilke. 1992. The effect of social categorization on cooperation in three types of social dilemmas. *Journal of Economic Psychology* 13: 135-151.

Zelmer, Jennifer. 2003. Linear Public Goods Experiments: A Meta-Analysis. *Experimental Economics* 6: 299 – 310.

APPENDIX

A Experimental Foundations

The theoretical framework proposed in this paper attempts to capture empirical results from three strands of research that study behavior in groups: the minimal group paradigm, public goods experiments and studies of social influence.³² This appendix briefly reviews these results.

A.1 The minimal group paradigm (MGP)

Consider the following allocation task. Subjects are assigned to one of two groups. Each subject then chooses an allocation of payoffs between two other randomly chosen subjects. The only information provided about these subjects is their group affiliation. The set of possible allocations is structured to examine whether subjects seek to maximize total payoffs, the absolute payoff of one participant, or the difference in payoffs between the two. Choices are made privately and simultaneously. There is no interaction between subjects and they never know the decisions of other subjects, nor who is a member of what group. A crucial characteristic of the MGP task is that a subject’s material payoff – the amount allocated to him by other subjects – is independent of his decision. Thus, material-payoff maximization offers no sharp prediction of behavior.

Varying perceived distance. The MGP environment has been studied extensively in experiments initiated in the late 1960s (see especially Tajfel 1970, Tajfel et al. 1971) and replicated hundreds of times (see Brewer 1979 and Bourhis and Gagnon 2001 for reviews). Most commonly, the categorization into groups consists of making salient an attribute that differentiates members of one group from members of the other. In the terminology of the present paper, this manipulates perceived distances from the groups.³³ The robust result is that despite the very weak treatment, subjects systematically favor their ingroup member. Further, there is evidence that a majority of subjects choose allocations that maximize the *relative* gain in favor of the ingroup member over allocations that maximize both the absolute payoff of the ingroup member and the joint payoffs.

Varying group status. Consider now the effect of exogenously endowing one group with higher status. A substantial body of research, both experimental and correlational, exists on the implications. These studies consistently find that people tend to identify more with high status groups than with low status groups.³⁴ As measures of identification, many experimental studies use the MGP allocation task, while other studies use subjects’ reported feelings and attitudes toward the ingroup and the outgroup. Similar effects of group status emerge from field studies.³⁵

³²The standard two-person economic experiments (e.g. dictator, ultimatum and prisoner’s dilemma games) have mostly abstracted from group-related issues. Nevertheless, a growing number of studies incorporate groups into the design of these games. Results, while still relatively scarce, are consistent with the social identity model proposed here. See Bernhard et al. (2006), Charness et al. (2007), Chen and Li (2006), Fowler and Kam (2007) and Goette et al. (2006).

³³That the treatment indeed changes “perceived distance” is supported by subjects’ reports: categorized subjects tend to indicate that they are more similar to their anonymous ingroup members than to the outgroup members.

³⁴See e.g. Ellemers et al. (1988), Ellemers et al. (1992), Ellemers et al. (1999), Guimond et al. (2002), Hogg and Hains (1996), Mael and Ashforth (1992) and Roccas (2003). A meta analysis of 92 experimental studies (including 145 independent samples) with high-status/low-status manipulation confirms that high status group members favor their ingroup over the outgroup significantly more than do low status group members (Bettencourt et al. 2001).

³⁵For example, winning sports teams tend to attract more fans (Boen et al. 2002) and generate more identification (Cialdini et al. 1976). Double-major university students identify more with their higher-status department, and are more likely to identify with a given department the lower is the status of the other department they major in (Roccas 2003).

A.2 Public goods experiments

Minimal-Group allocation decisions are useful for inferring identification and studying its determinants, since they keep own material payoffs fixed. Public goods experiments examine behavior when siding with one's group involves a material cost. In a typical experiment, subjects need to decide how much of their endowment to contribute to a group account (the public good), where benefits accrue to all group members. Each group member has a clear incentive to contribute zero (this is the dominant strategy for a material payoff maximizer). However, overall payments are maximized if every subject contributes his entire endowment.

Experimental results show that, keeping material payoffs fixed, individuals tend to contribute more to their group when attributes that are common to all group members are highlighted, compared to treatments that highlight attributes that only some group members share.³⁶ Indeed, it has been shown that making the membership in a randomly-assigned group sufficiently salient leads to higher contributions (Eckel and Grossman 2005) and that contributions increase when the group is physically closer, i.e. seated in the same room rather than in another room (Orbell et al. 1988). Studies also suggest that contributions tend to decrease with ingroup heterogeneity.³⁷

Finally, researchers have studied situations where the payoff structure is augmented to include a *negative* effect of one's contribution on the payoffs of outgroup members. If agents are only interested in their own material payoffs, or even only in their group's material payoff ("parochial altruism"), this should make no difference to the amounts contributed. In practice, such intergroup competition substantially increases contributions.³⁸

A.3 Conformity

Conformity refers to the act of changing one's behavior to match the responses of others (Cialdini and Goldstein 2004). A significant literature on social influence has shown that individuals are more likely to conform to views and behaviors of members of their own group than to those of outgroup members.³⁹ Further, people conform more to ingroup norms of behavior when their group membership is made more salient, either by highlighting group concerns, by making explicit comparisons between the ingroup and the outgroup or by making group identity more salient than individual identity.⁴⁰

To sum up: when led to perceive themselves as similar to their group, or when their group is endowed with high status, subjects often reveal a preference for a high relative position of their group in comparison

³⁶Brewer and Kramer (1986), De Cremer and Van Vugt (1999), Kramer and Brewer (1984, 1986), Wit and Wilke (1992).

³⁷See Ledyard (1995), Cherry et al. (2005), Polzer et al. (1999) and Zelmer (2003) for experimental results. For field studies, see Alesina et al. (1999) on the relationship between ethnic homogeneity and provision of public goods across U.S. localities, and Costa and Kahn (2003) on the relationship between company heterogeneity and cowardice in the Union Army.

³⁸Bornstein and Ben Yossef (1994) is a particularly clean example. See Bornstein (2003) for a review of this literature. In Bornstein's words, "real intergroup conflict serves as a unit-forming factor that enhances group identification beyond classification and labeling alone... Group identification, in turn, increases cooperation, as it leads individual group members to substitute group regard for egoism as the principle guiding their choices... The participants in the [intergroup] condition reported a higher motivation to maximize the relative ingroup advantage than those in the [public good] condition, and this competitive orientation was positively correlated with their contribution behavior" (pp. 138-9).

³⁹See e.g. Abrams et al. (1990) for behavior in an Asch line judgement experiment with ingroup vs. outgroup confederates. Mackie et al. (1990) and Mackie et al. (1992) report that subjects changed their privately held attitudes toward an advocated position coming from an anonymous ingroup member but were unaffected by the same message coming from an outgroup member. Spears et al. (2001) put it this way: "unless the nature of the message is so outlandish as to bring the whole question of group self-definition into question, we will tend to shift towards the group's position... the prototypical position" (p. 334).

⁴⁰See Cialdini and Goldstein (2004), Mackie and Wright (2001) and Spears et al. (2001) for reviews. Akerlof and Kranton (2000) survey many field studies that document conformity to group prototypical behavior.

to other groups, and appear to be willing to sacrifice personal material gain to promote that goal. They also show a stronger tendency to conform to views and behaviors of members of their group than to those of outgroup members.

B Proofs

Proof of Proposition 1:

Consider an agent that identifies with the poor group. By Definition 1 and equation (8) his utility is given by:

$$U_i(t) = \pi_i(t) - \beta d_{iP}^2 + \gamma S_P(t)$$

Substituting for the status function from equation (6) and using equations (1) (2) to substitute for $\pi_i, \tilde{\pi}_R$ and $\tilde{\pi}_P$ we have:

$$U_i(t) = (1-t)y_i + (t-t^2/2)y - \beta d_{iP}^2 + \gamma (\sigma_0^P + \sigma_1^P (t-1) \delta)$$

where $\delta \equiv y_r - y_p > 0$. Solving for the optimal tax rate under $y_i = y_p$ we obtain:

$$t_P^*(y_p) = \min \left\{ \frac{y - y_p + \gamma \sigma_1^P \delta}{y}, 1 \right\} > \hat{t} = \frac{y - y_p}{y}. \quad (9)$$

Similarly, for an agent that identifies with the Nation we have (using (7)):

$$U_i(t) = (1-t)y_i + (t-t^2/2)y - \beta d_{iN}^2 + \gamma (\sigma_0^N + \sigma_1^N (\alpha \pi_p + (1-\alpha)\pi_r - \tilde{\pi}_{r(N)}))$$

which, for $y_i = y_p$, yields the following optimal tax rate:

$$t_N^*(y_p) = \max \left\{ 0, \frac{y - y_p + \gamma \sigma_1^N (\alpha \delta + y - y_r)}{(1 + \gamma \sigma_1^N) y} \right\} \leq \hat{t}. \quad (10)$$

Together, inequalities (9) and (10) complete the proof. ■

Proof of Proposition 2:

Lemma 1 $S_N(t_P^*(y_p)) - S_P(t_P^*(y_p)) < S_N(t_N^*(y_p)) - S_P(t_N^*(y_p))$.

Proof: From (9) we know that $t_P^*(y_p) > \hat{t}$. Since \hat{t} maximizes π_p , it must be the case that $S_P(t_P^*(y_p)) > S_P(\hat{t})$. Further, since $\frac{\partial S_P}{\partial t} > 0$ and $t_N^*(y_p) \leq \hat{t}$, we have:

$$S_P(t_P^*(y_p)) > S_P(\hat{t}) \geq S_P(t_N^*(y_p)). \quad (11)$$

By a similar argument $S_N(t_N^*(y_p)) \geq S_N(\hat{t})$. Further,

$$\frac{\partial S_N}{\partial t} = \sigma_1^N [\alpha(y - y_p - ty) + (1-\alpha)(y - y_r - ty)].$$

Since the second term in the square brackets is always negative while the first term is negative for $t > \hat{t}$, we have $\frac{\partial S_N}{\partial t} < 0$ for all $t > \hat{t}$. Since $t_P^*(y_p) > \hat{t}$ this implies

$$S_N(t_P^*(y_p)) < S_N(\hat{t}) \leq S_N(t_N^*(y_p)). \quad (12)$$

Together, (11) and (12) prove the lemma. ■

I now prove the Proposition.

(1) Existence. Consider the following profile of identities and actions:

$$\begin{aligned} g_i &= P \text{ and } a_i = t_P^*(y_p) \text{ for all } i \in P; \\ g_i &= g_i^* \text{ and } a_i = t_{g_i^*}^*(y_r) \text{ for all } i \in R \end{aligned}$$

where $g_i^* \in \{R, N\}$ is an optimal identity for agent $i \in R$ given $t = t_P^*(y_p)$. Note all agents vote sincerely as assumed by the political mechanism. Suppose this profile is not an equilibrium. Since the poor are the majority, the chosen tax rate is $t^* = t_P^*(y_p)$. Further, no agent can change the chosen tax rate by unilaterally changing his vote (recall the number of poor is greater than the number of rich by more than one), and hence no agent i can unilaterally change either π_i, S_R, S_P or S_N . Since by construction the identities of the rich satisfy the equilibrium condition, if this profile is not an equilibrium it must be the case that for some poor agent, the choice of identity is not optimal. That is, at $t_P^*(y_p)$ identifying with P is strictly worse than identifying with N , which implies:

$$\gamma [S_N(t_P^*(y_p)) - S_P(t_P^*(y_p))] > \beta(d_{iN}^2 - d_{iP}^2) \text{ for some } i \in P.$$

But since there is no within-class heterogeneity, both d_{iN} and d_{iP} are identical for all $i \in P$. By Lemma 1 this implies

$$\gamma [S_N(t_N^*(y_p)) - S_P(t_N^*(y_p))] > \beta(d_{iN}^2 - d_{iP}^2) \text{ for all } i \in P.$$

Therefore, identifying with the nation is optimal for poor agents under $t = t_N^*(y_p)$. Thus, the following profile is an equilibrium:

$$\begin{aligned} g_i &= N \text{ and } a_i = t_N^*(y_p) \text{ for all } i \in P; \\ g_i &= g_i^{**} \text{ and } a_i = t_{g_i^{**}}^*(y_r) \text{ for all } i \in R \end{aligned}$$

where $g_i^{**} \in \{R, N\}$ is an optimal identity for agent $i \in R$ given $t = t_N^*(y_p)$.

(2) If in equilibrium all the poor identify with their class then they all vote for $t_P^*(y_p)$, which, since they are the majority, is the chosen tax rate. Similarly, if all the poor identify with their nation, then the chosen tax rate is $t_N^*(y_p) < t_P^*(y_p)$. I now show that except under two very specific conditions, these are the only types of equilibria that can occur. Note first that the equilibrium tax rate t^* can only take one of two values. To see this, use equations (9) (10) and similarly solve for the preferred tax rates of the rich, to obtain:

$$t_P^*(y_p) > t_N^*(y_p) \geq t_N^*(y_r) \geq t_R^*(y_r). \quad (13)$$

Since the rich are a minority, (13) implies that the median preferred tax rate must be either $t_P^*(y_p)$ or $t_N^*(y_p)$. This means that there are only two cases where it is possible to have an equilibrium where some poor identify with their class and some identify with the nation. That is, only if the following equality holds:

$$\gamma (S_N(t) - S_P(t)) = \beta(d_{pN}^2 - d_{pP}^2) \text{ for either } t = t_P^*(y_p) \text{ or } t = t_N^*(y_p),$$

where lowercase p denotes a typical poor agent. In all other cases, all the poor strictly prefer one (and the same) identity to the other.

(3) Restrict attention to equilibria where all the poor identify with the same group. Thus, all the poor are identical and we can denote a typical poor agent by lowercase p . Given that all agents vote sincerely,

no agent can unilaterally change the tax rate. Hence, the equilibrium condition implies that

$$g_p \in \begin{cases} \{N\} & \text{if } \gamma [S_N(t^*) - S_P(t^*)] > \beta(d_{pN}^2 - d_{pP}^2) \\ \{P\} & \text{if } \gamma [S_N(t^*) - S_P(t^*)] < \beta(d_{pN}^2 - d_{pP}^2) \\ \{N, P\} & \text{otherwise} \end{cases} .$$

But in equilibrium $t^* = t_{g_p}^*(y_p)$. We thus obtain the following conditions:

(c1) $t_N^*(y_p)$ is an equilibrium tax rate if $\gamma [S_N(t_N^*(y_p)) - S_P(t_N^*(y_p))] \geq \beta(d_{pN}^2 - d_{pP}^2)$.

(c2) $t_P^*(y_p)$ is an equilibrium tax rate if $\gamma [S_N(t_P^*(y_p)) - S_P(t_P^*(y_p))] \leq \beta(d_{pN}^2 - d_{pP}^2)$.

From equation (5) we have:

$$\begin{aligned} d_{pN}^2 &= w_y(y_p - y)^2 + w_N(q_p^N - q_N^N)^2 + w_C(q_p^C - q_N^C)^2 \\ &= w_y\delta^2(1 - \lambda)^2 + w_C(1 - \lambda)^2 \end{aligned} \quad (14)$$

and:

$$d_{pP}^2 = 0 \quad (15)$$

where $w_C = 1 - w_y - w_N$. From equations (6) and (7) we have:

$$\begin{aligned} S_N(t) - S_P(t) &= \sigma_0^N + \sigma_1^N [\alpha\pi_p(t) + (1 - \alpha)\pi_r(t) - \tilde{\pi}_{r(N)}] - [\sigma_0^P + \sigma_1^P (\pi_p(t) - \pi_r(t))] \\ &= \sigma_0^N - \sigma_0^P - \sigma_1^N \tilde{\pi}_{r(N)} + (\sigma_1^N \alpha - \sigma_1^P) \pi_p(t) + (\sigma_1^N (1 - \alpha) + \sigma_1^P) \pi_r(t). \end{aligned} \quad (16)$$

Conditions (c1) and (c2) together with equations (14) and (15) yield the comparative statics in part 3a of the Proposition; and with equation (16) yield the comparative statics in parts 3b and 3c.

(4) Consider a fall in the inter-class difference in pre-tax income $\delta \equiv y_r - y_p$, keeping all other parameters constant (including mean national income y and the proportion of the poor λ). This means pre-tax income inequality falls. To see that the effect on the equilibrium tax rate is ambiguous, consider the case where $\alpha = \lambda \in (0.5, 1)$ and suppose the economy is initially at a national-identity equilibrium. Note first that by equation (14), a fall in δ reduces d_{pN}^2 . Second, from equations (16) (1) and (2) we have:

$$\begin{aligned} S_N(t) - S_P(t) &= \sigma_0^N - \sigma_0^P - \sigma_1^N \tilde{\pi}_{r(N)} + \sigma_1^N (\lambda\pi_p + (1 - \lambda)\pi_r) + \sigma_1^P (\pi_r - \pi_p) \\ &= \sigma_0^N - \sigma_0^P - \sigma_1^N \tilde{\pi}_{r(N)} + \sigma_1^N y(1 - t^2/2) + \sigma_1^P (1 - t)\delta \end{aligned} \quad (17)$$

From (10) we obtain:

$$t_N^*(y_p) = \frac{y - y_p}{y(1 + \gamma\sigma_1^N)} = \frac{(1 - \lambda)\delta}{y(1 + \gamma\sigma_1^N)} \quad (18)$$

Plugging (18) into (17) and differentiating with respect to δ yields:

$$\frac{\partial}{\partial \delta} [S_N(t_N^*(y_p)) - S_P(t_N^*(y_p))] = -\sigma_1^N \frac{(1 - \lambda)^2 \delta}{y(1 + \gamma\sigma_1^N)^2} + \sigma_1^P \left(1 - \frac{2(1 - \lambda)\delta}{y(1 + \gamma\sigma_1^N)} \right) \quad (19)$$

Now, if this derivative is negative in the range of δ we're considering (e.g. if σ_1^P is sufficiently small), then the fall in δ causes both an increase in $S_N - S_P$ at $t_N^*(y_p)$ and a drop in $(d_{pN}^2 - d_{pP}^2)$. Condition (c1) therefore still holds and the economy remains at a national-identity equilibrium. Note however that the equilibrium tax rate is lower as a result of the lower δ (by equation (18)).

If on the other hand the derivative in equation (19) is positive in the range of δ we're considering (e.g. if λ is sufficiently large), then as δ falls so does $S_N - S_P$ at $t_N^*(y_p)$. If this change is large enough, condition

(c1) no longer holds, which implies that the economy switches to a class-identity equilibrium. Using (9), the tax rate in this case is:

$$t_P^*(y_p) = \min \left\{ \frac{(1 - \lambda + \gamma\sigma_1^P)\delta}{y}, 1 \right\} \quad (20)$$

Let δ_0 be the inter-class difference in income before the change and $\delta_0 - \varepsilon > 0$ the inter-class difference after the change. Then using equations (18) and (20) the equilibrium tax rate has increased if

$$\frac{(1 - \lambda + \gamma\sigma_1^P)(\delta_0 - \varepsilon)}{y} > \frac{(1 - \lambda)\delta_0}{y(1 + \gamma\sigma_1^N)}$$

which holds if λ is sufficiently large.

(5) Fix all the parameters of the model except σ_0^N . This implies that $t_N^*(y_p)$, $t_P^*(y_p)$ and $d_{pN}^2 - d_{pP}^2$ are fixed. By equation (17) there exists a $\sigma_0^N \in \mathbb{R}$ such that $S_N(t_N^*(y_p)) - S_P(t_N^*(y_p)) = \frac{\beta}{\gamma}(d_{pN}^2 - d_{pP}^2)$. By condition (c1) $t_N^*(y_p)$ is then an equilibrium. But by Lemma 1 we also have $S_N(t_P^*(y_p)) - S_P(t_P^*(y_p)) < \frac{\beta}{\gamma}(d_{pN}^2 - d_{pP}^2)$. Hence by condition (c2) $t_P^*(y_p)$ is an equilibrium. ■

Proof of Proposition 3:

Consider an SIE where some rich agent identifies with the nation. From the equilibrium condition we have:

$$\gamma S_N - \beta d_{rN}^2 \geq \gamma S_R - \beta d_{rR}^2 \quad (21)$$

where r is a typical rich agent. From equation (5) we have:

$$d_{rN}^2 = w_y \lambda^2 \delta^2 + w_c \lambda^2 \quad (22)$$

$$d_{rR}^2 = 0 \quad (23)$$

Plugging (22) and (23) into (21) and rearranging we get

$$\gamma S_N - \beta(1 - \lambda)^2 (w_y \delta^2 + w_c) \geq \gamma S_P + \gamma(S_R - S_P) + \beta(2\lambda - 1) (w_y \delta^2 + w_c)$$

Or, using (14) and (15):

$$\gamma S_N - \beta d_{pN}^2 \geq \gamma S_P - \beta d_{pP}^2 + [\gamma(S_R - S_P) + \beta(2\lambda - 1) (w_y \delta^2 + w_c)].$$

Thus unless $S_R - S_P \leq -\frac{\beta}{\gamma} (w_y \delta^2 + w_c) (2\lambda - 1)$, the term in square brackets is positive, hence $\gamma S_N - \beta d_{pN}^2 > \gamma S_P - \beta d_{pP}^2$ and the poor identify with the nation.

Consider on the other hand an SIE where $\gamma S_N - \beta d_{pN}^2 = \gamma S_P - \beta d_{pP}^2$ and the poor identify with the nation. If the condition $S_R - S_P > -\frac{\beta}{\gamma} (w_y \delta^2 + w_c) (2\lambda - 1)$ holds, then the rich do not identify with the nation since $\gamma S_N - \beta d_{rN}^2 < \gamma S_R - \beta d_{rR}^2$. ■

Proof of Proposition 4:

Let q_i^x equal unity if agent i has attribute x and zero otherwise, and call these agents type 1 and type 0 respectively. Let $w_x > 0$ be the associated attention weight and $\mu \in (0, 0.5)$ be the proportion of poor agents that are type 1. All other attributes are as before.

Modifying equations (14) and (15) to include the new attribute, perceived distances of poor agents are:

$$d_{iN}^2 = \begin{cases} w_y \delta^2 (1 - \lambda)^2 + w_C (1 - \lambda)^2 + w_x (1 - \lambda \mu)^2 & \text{if } q_i^x = 1 \text{ and } i \in P \\ w_y \delta^2 (1 - \lambda)^2 + w_C (1 - \lambda)^2 + w_x (\lambda \mu)^2 & \text{if } q_i^x = 0 \text{ and } i \in P \end{cases} \quad (24)$$

$$d_{iP}^2 = \begin{cases} w_x(1 - \mu)^2 & \text{if } q_i^x = 1 \text{ and } i \in P \\ w_x\mu^2 & \text{if } q_i^x = 0 \text{ and } i \in P \end{cases} \quad (25)$$

Define:

$$\begin{aligned} \Delta_1 &\equiv (d_{iN}^2 - d_{iP}^2)|_{q_i^x=1 \text{ and } i \in P} \\ &= w_y\delta^2(1 - \lambda)^2 + w_C(1 - \lambda)^2 + w_x((1 - \lambda\mu)^2 - (1 - \mu)^2) \end{aligned} \quad (26)$$

$$\begin{aligned} \Delta_0 &\equiv (d_{iN}^2 - d_{iP}^2)|_{q_i^x=0 \text{ and } i \in P} \\ &= w_y\delta^2(1 - \lambda)^2 + w_C(1 - \lambda)^2 + w_x\mu^2(\lambda^2 - 1) \end{aligned} \quad (27)$$

I now show that in any SIE, the chosen tax rate is the one preferred by the type 0 poor. From (26) and (27) we have:

$$\Delta_1 - \Delta_0 = 2\mu w_x(1 - \lambda) > 0. \quad (28)$$

Thus, whenever type 0 poor identify with the poor class, so do type 1 poor. Since the poor are a majority, the chosen tax rate in this case is $t_P^*(y_p)$. If both type 0 and type 1 poor identify with the nation, then the chosen tax rate is $t_N^*(y_p)$. Finally, if type 0 poor identify with the nation and type 1 poor identify with their class, then by (13) and by the fact that neither the rich nor the type 1 poor are the majority, the median voter is again type 0 poor. The equilibrium conditions are thus still (c1) and (c2) from the proof of proposition 2, but with $(d_{pN}^2 - d_{pP}^2)$ replaced with Δ_0 in the statement of both conditions.

Next, note from (27) that Δ_0 is decreasing in μ . Thus, starting from an SIE with $t^* = t_N^*(y_p)$ an increase in μ does not change the equilibrium tax rate (condition (c1) still holds). Conversely, starting from an SIE with $t^* = t_P^*(y_p)$ an increase in μ may imply that condition (c2) no longer holds, so that $\gamma[S_N(t_P^*(y_p)) - S_P(t_P^*(y_p))] > \beta\Delta_0$. This means $t_P^*(y_p)$ cannot be an equilibrium tax rate (type 0 poor strictly prefer to identify with the nation under this tax rate), and the unique equilibrium is $t^* = t_N^*(y_p)$. A similar result obtains with respect to an increase in w_x and a decrease in w_y and w_C . ■

C WVS Household Income Data

Data are from the first three waves of the WVS (Inglehart et al. 2000). The WVS reports a measure of total, pre-tax household income “counting all wages, salaries, pensions and other incomes that come in... before taxes and other deductions”. For most countries, household income is reported in ten categories, where the lowest and uppermost categories are open ended [The USA in the second wave has several open categories at the top. This does not alter the form of the likelihood function used to estimate the distribution]. These income categories are not deciles. Individual level analysis in this paper uses only data from those countries where the income categories cutoff points are known. A minor problem is that of assigning individuals a level of income based on the reported categories, that is, of assigning a specific point within the reported interval. This is done here by assuming a log-normal distribution of household income within each nation and wave, and estimating the parameters of the distribution by maximum likelihood. Once one has the distribution, each individual is assigned the median point conditional on the interval within which her income lies. All calculations were performed using the sampling weights in the different nations and waves.

Table 1: Support for Redistribution, Income and National Pride

	log Income		Very Proud		Quite Proud		N
Austria 90	-0.903**	(0.172)	-0.638**	(0.318)	-0.301	(0.319)	1323
Belgium 90	-1.152**	(0.182)	-0.152	(0.217)	-0.120	(0.188)	1517
Brazil 90	-0.324**	(0.083)	0.128	(0.249)	-0.062	(0.271)	1622
Britain 90	-0.868**	(0.120)	-0.572**	(0.285)	-0.316	(0.285)	1046
Bulgaria 98	-0.373**	(0.154)	-0.297	(0.285)	-0.239	(0.283)	767
Canada 90	-0.646**	(0.140)	-0.715**	(0.332)	-0.436	(0.339)	1422
Chile 90	-0.503**	(0.118)	-0.373	(0.261)	-0.436	(0.271)	1441
E Germany 90	-0.548**	(0.249)	-0.715**	(0.212)	-0.359**	(0.181)	1181
Estonia 96	-0.895**	(0.197)	0.229	(0.255)	0.225	(0.209)	762
Finland 90	-0.835**	(0.284)	-0.722*	(0.371)	-0.529	(0.362)	549
Hungary 90	-1.204**	(0.181)	0.171	(0.282)	0.457*	(0.276)	918
India 90	-0.395**	(0.113)	0.409	(0.261)	0.217	(0.285)	2279
Italy 90	-0.771**	(0.136)	-0.255	(0.261)	-0.109	(0.245)	1363
Japan 90	-0.951**	(0.186)	-0.872**	(0.217)	-0.588**	(0.191)	723
Japan 95	-1.092**	(0.180)	-0.381*	(0.213)	-0.281*	(0.170)	770
Latvia 96	-0.610**	(0.146)	-0.977**	(0.236)	-0.299	(0.182)	879
Macedonia 97	-0.299**	(0.112)	-0.504	(0.420)	-0.09	(0.478)	509
Netherlands 90	-0.936**	(0.152)	-0.454**	(0.222)	-0.447**	(0.180)	752
Portugal 90	-0.721**	(0.149)	-0.229	(0.306)	-0.120	(0.300)	1089
Spain 90	-0.766**	(0.105)	-0.694**	(0.151)	-0.701**	(0.146)	3180
Spain 96	-0.244	(0.172)	-0.202	(0.392)	0.136	(0.412)	842
Sweden 96	-0.691**	(0.167)	-0.226	(0.250)	-0.079	(0.249)	867
Switzerland 96	-1.234**	(0.211)	-0.763**	(0.294)	-0.480*	(0.253)	887
Taiwan 95	-0.183	(0.121)	-0.594**	(0.232)	-0.051	(0.169)	1137
Turkey 90	-0.468**	(0.119)	-1.747**	(0.341)	-1.723**	(0.366)	968
Turkey 96	-0.467**	(0.125)	-1.549**	(0.308)	-0.991**	(0.341)	1782
USA 90	-0.240*	(0.126)	-2.063**	(0.529)	-1.611**	(0.537)	1560
USA 95	-0.358**	(0.123)	-0.904*	(0.530)	-0.672	(0.541)	1310
Venezuela 96	-0.403**	(0.151)	-0.021	(0.788)	-0.761	(0.917)	1059
W Germany 90	-1.091**	(0.185)	-1.253**	(0.205)	-0.740**	(0.154)	1600

WVS data. OLS, robust standard errors in parentheses. Each row is a separate regression. Dependent variable is support for redistribution, ranging from 1 (“We need larger income differences as incentives for individual effort”) to 10 (“Incomes should be made more equal”). Reported are the estimated coefficients on log household income, and two dummies for national pride: “very proud” and “quite proud”. Omitted categories are “not proud” and “not at all proud”.

All regressions control for log of household size, years of schooling, sex, age, and age squared, except Turkey 1990 which does not control for schooling and Taiwan 95 which does not control for household size. Missing values for household size and schooling are dummied out.

** Denotes significantly different from zero at the 5 % level.

* Denotes significantly different from zero at the 10 % level.

Table 2: National Identification, Income and Years of Schooling

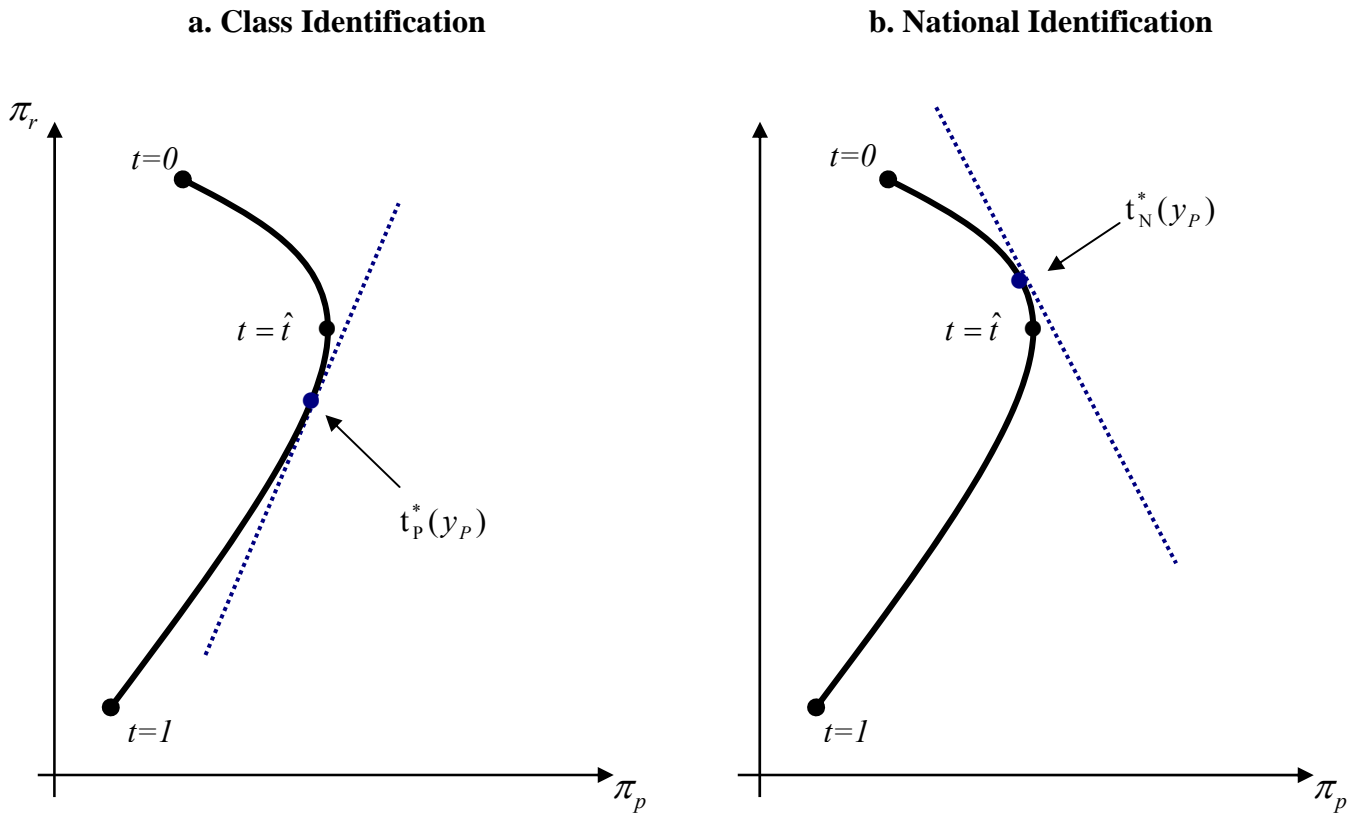
Nation	(1)			(2)				
	log Income		N	log Income		Years of Schooling		N
Australia	-0.169	(0.110)	1889	-0.037	(0.127)	-0.100**	(0.046)	1889
Austria	-0.520	(0.338)	698	-0.530	(0.338)	-0.018	(0.021)	698
Bulgaria	-0.538**	(0.189)	633					
Canada	-0.228	(0.181)	1106	0.288	(0.200)	-0.195**	(0.031)	1081
Czech Rep.	-1.033**	(0.296)	593	-1.005**	(0.298)	-0.012	(0.011)	591
E-Germany	-0.870**	(0.443)	433	-0.991**	(0.422)	-0.051**	(0.014)	417
Great-Britain	-0.793**	(0.181)	805	-0.823**	(0.179)	-0.034**	(0.014)	805
Hungary	-1.084**	(0.271)	734	-1.020**	(0.277)	-0.044	(0.029)	734
Ireland	-0.530**	(0.178)	817	-0.471**	(0.191)	-0.030	(0.037)	813
Italy	-0.807**	(0.259)	1017	-0.120	(0.270)	-0.216**	(0.032)	1017
Japan	-0.776**	(0.237)	782	-0.777**	(0.238)	-0.009	(0.010)	778
Latvia	-0.346	(0.221)	468	-0.215	(0.235)	-0.094**	(0.046)	467
Netherlands	-0.952**	(0.183)	1174	-0.677**	(0.185)	-0.153**	(0.028)	1174
New Zealand	-0.502**	(0.195)	787	-0.902**	(0.269)	0.025	(0.024)	368
Norway	-0.647**	(0.199)	1083	-0.783**	(0.211)	-0.019**	(0.005)	1010
Poland	-1.150**	(0.172)	1005	-1.081**	(0.176)	-0.038*	(0.022)	1005
Slovak Rep.	-0.733**	(0.246)	1012	-0.735**	(0.246)	0.001	(0.008)	1012
Slovenia	-0.826**	(0.301)	463	-0.780**	(0.303)	-0.011	(0.008)	459
Spain	-0.910**	(0.222)	714	-0.901**	(0.225)	0.009	(0.005)	700
Sweden	-0.999**	(0.245)	882	-0.689**	(0.261)	-0.110**	(0.039)	826
United-States	-0.516**	(0.110)	1045	-0.355**	(0.165)	-0.160*	(0.091)	1045
W-Germany	-1.097**	(0.337)	900	-0.894**	(0.341)	-0.022**	(0.009)	875

ISSP 1995 data. OLS, robust standard errors in parentheses. Dependent variable is national identification scale. Each row reports the coefficient on the log of household income from two separate regressions. The regressions in column (1) do not control for years of schooling, while those in column (2) do, with the estimated coefficient reported. Samples do not include non-citizens. All regressions control for sex, age and log of household size. Missing values for household-size are dummied out.

** Denotes significantly different from zero at the 5 % level.

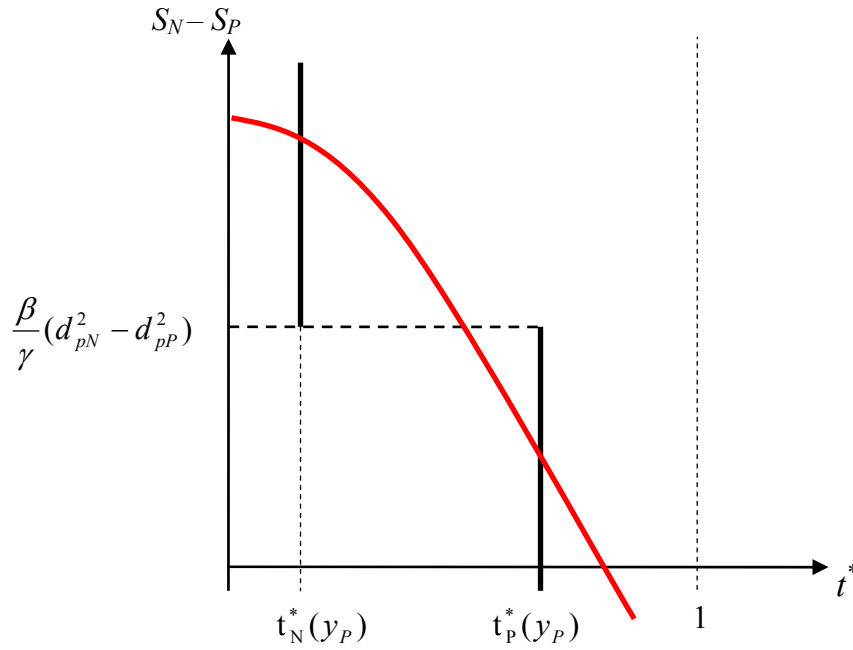
* Denotes significantly different from zero at the 10 % level.

Figure 1: The Voter's Choice



Note: In both panels, the solid curve depicts the implications of various tax rates for the post-tax-and-transfers incomes of the poor (π_p) and of the rich (π_r). When no taxes and no transfers are made, $\pi_r = y_r > y_p = \pi_p$. This is the point denoted $t = 0$. Increasing the tax rate implies moving down along the curve. The point that maximizes π_p is denoted $t = \hat{t}$. Finally, at the point denoted $t = 1$, full redistribution takes place and $\pi_r = \pi_p$. Panel (a) shows an indifference curve of a poor agent that identifies with his class (dotted line), and his preferred tax rate. Panel (b) shows an indifference curve and the preferred tax rate of a poor agent that identifies with his nation.

Figure 2: Social Identity Equilibria



Note: The downward sloping curve shows $S_N - S_P$ (the difference between the status of the nation and the status of the poor class) as a function of the tax rate: the higher is the level of redistribution, the lower this difference. The cutoff point on the vertical axis is the difference in perceived distances of a poor agent from the nation and from his class (scaled by the utility parameters β and γ). If $S_N - S_P$ is above (below) this cutoff, then national (class) identification is optimal for the poor. The solid step function then shows t^* (the chosen tax rate) as a function of $S_N - S_P$: when $S_N - S_P$ is low, the poor identify with their class and hence vote for $t_P^*(y_P)$. When $S_N - S_P$ is high, the poor identify with the nation and vote for $t_N^*(y_P)$. The figure depicts a situation where both a high-tax class-identity equilibrium and a low-tax national-identity equilibrium exist.

Figure 3: Support for Redistribution by National Identity and Income

a. Advanced Economies

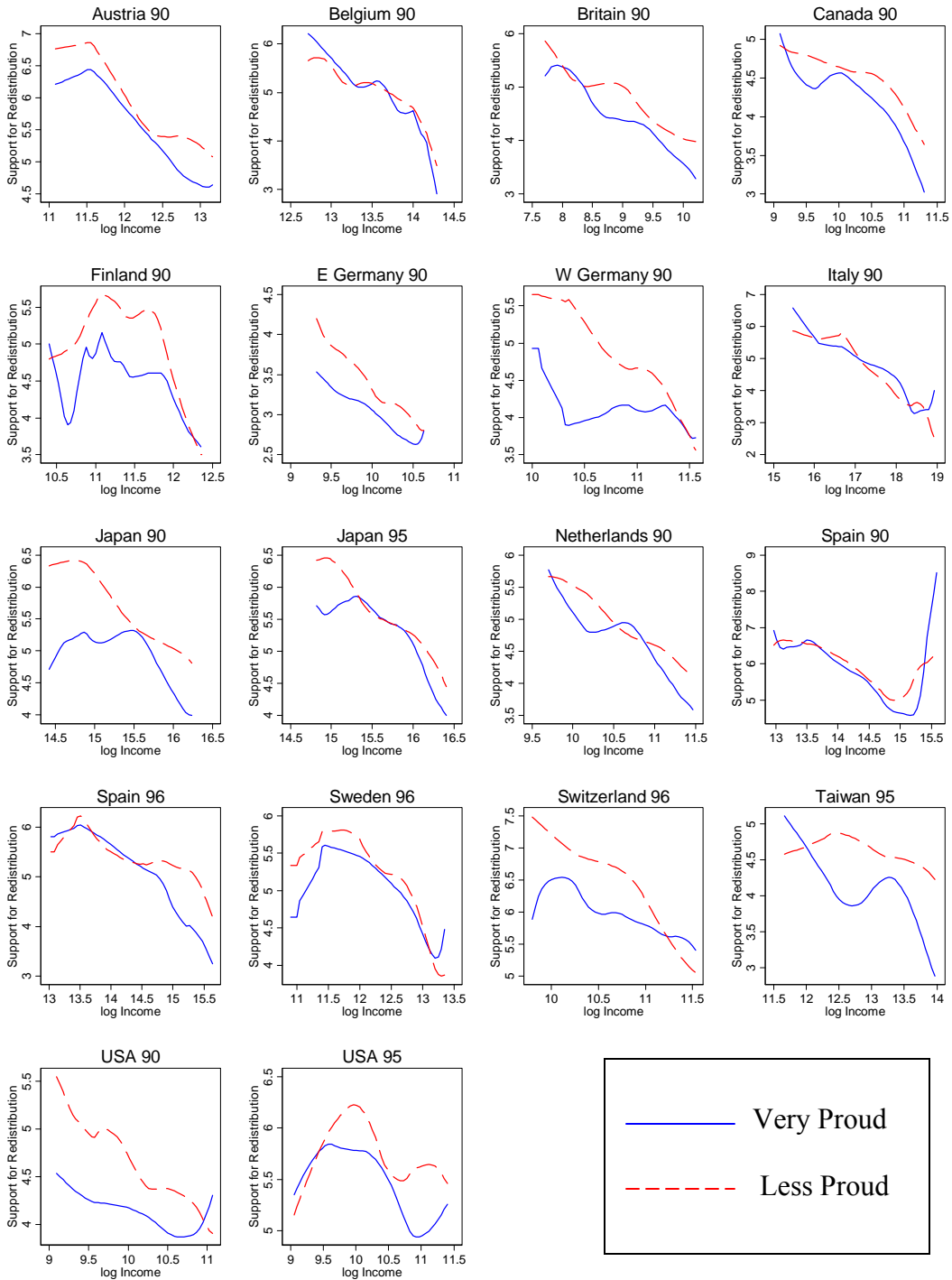
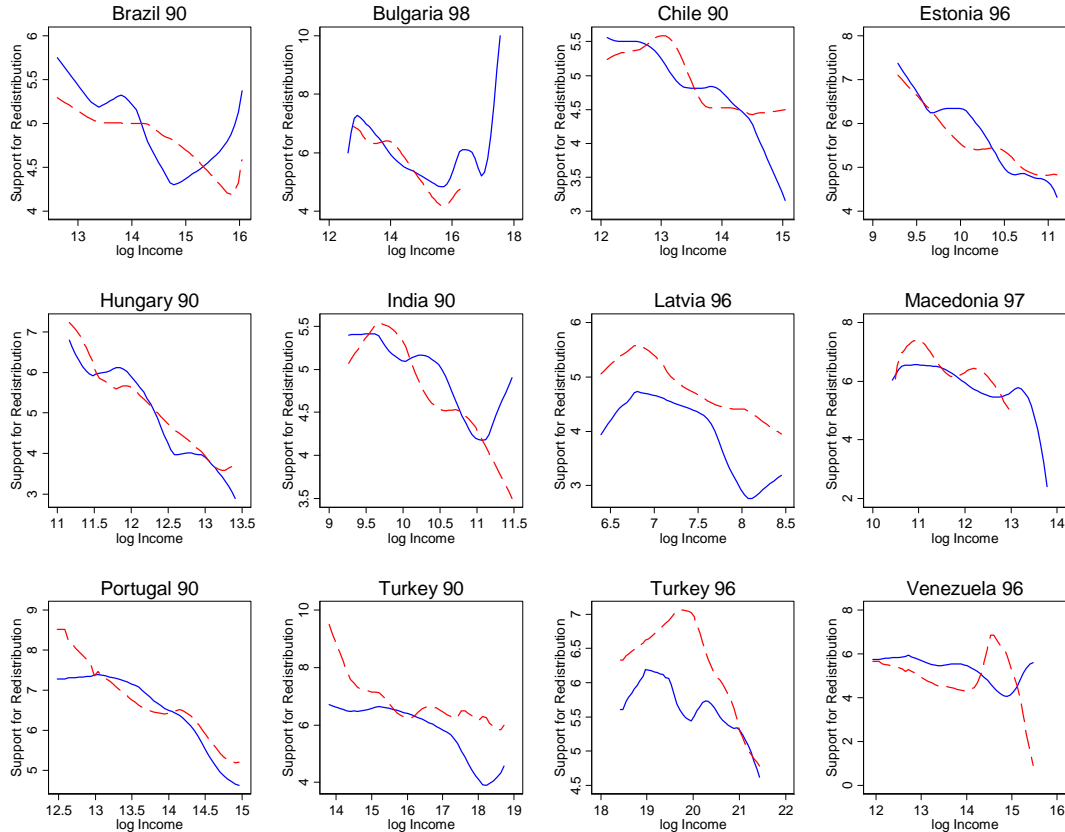


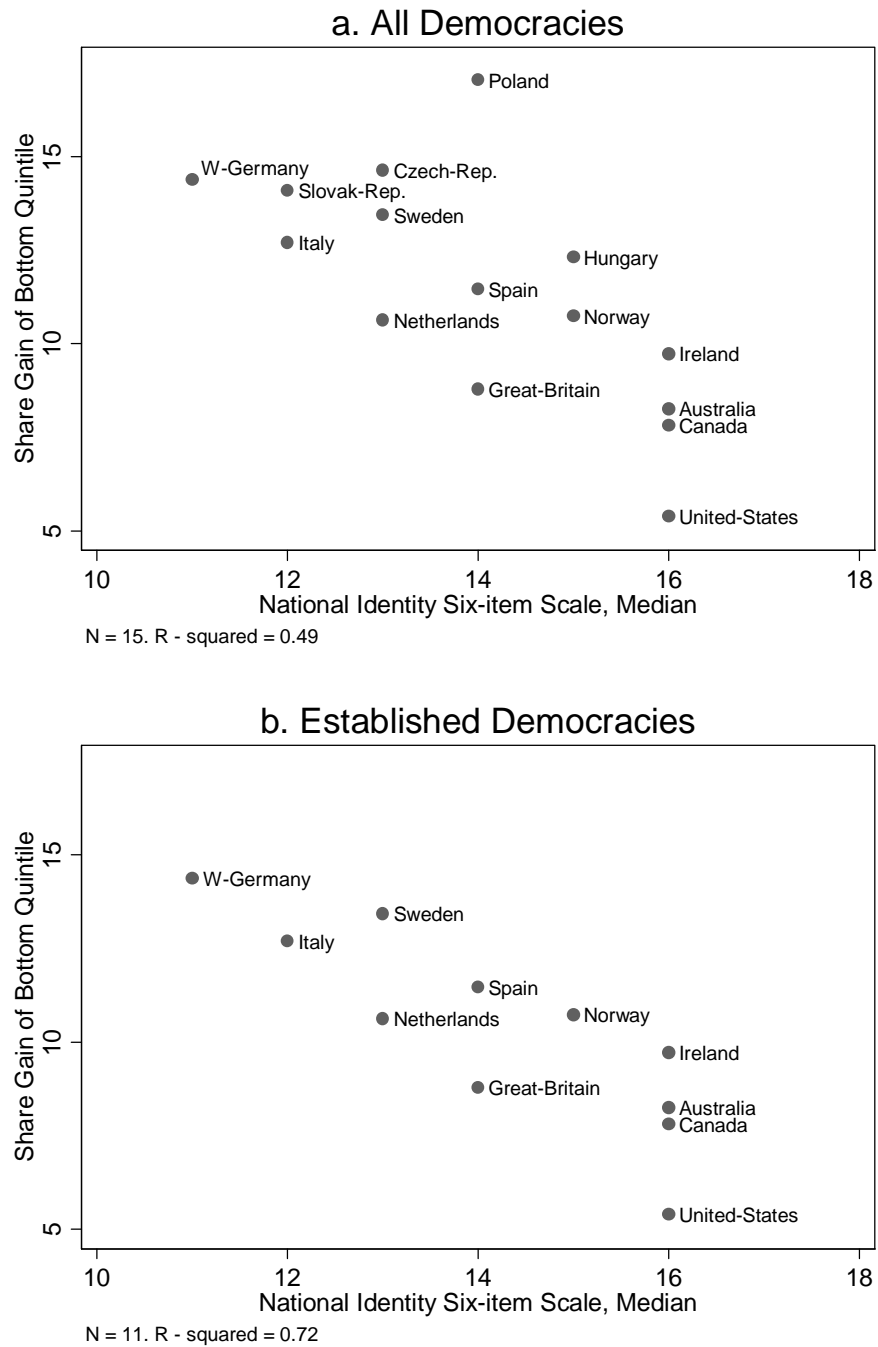
Figure 3 (continued): Support for Redistribution by National Identity and Income

b. Less Advanced Economies



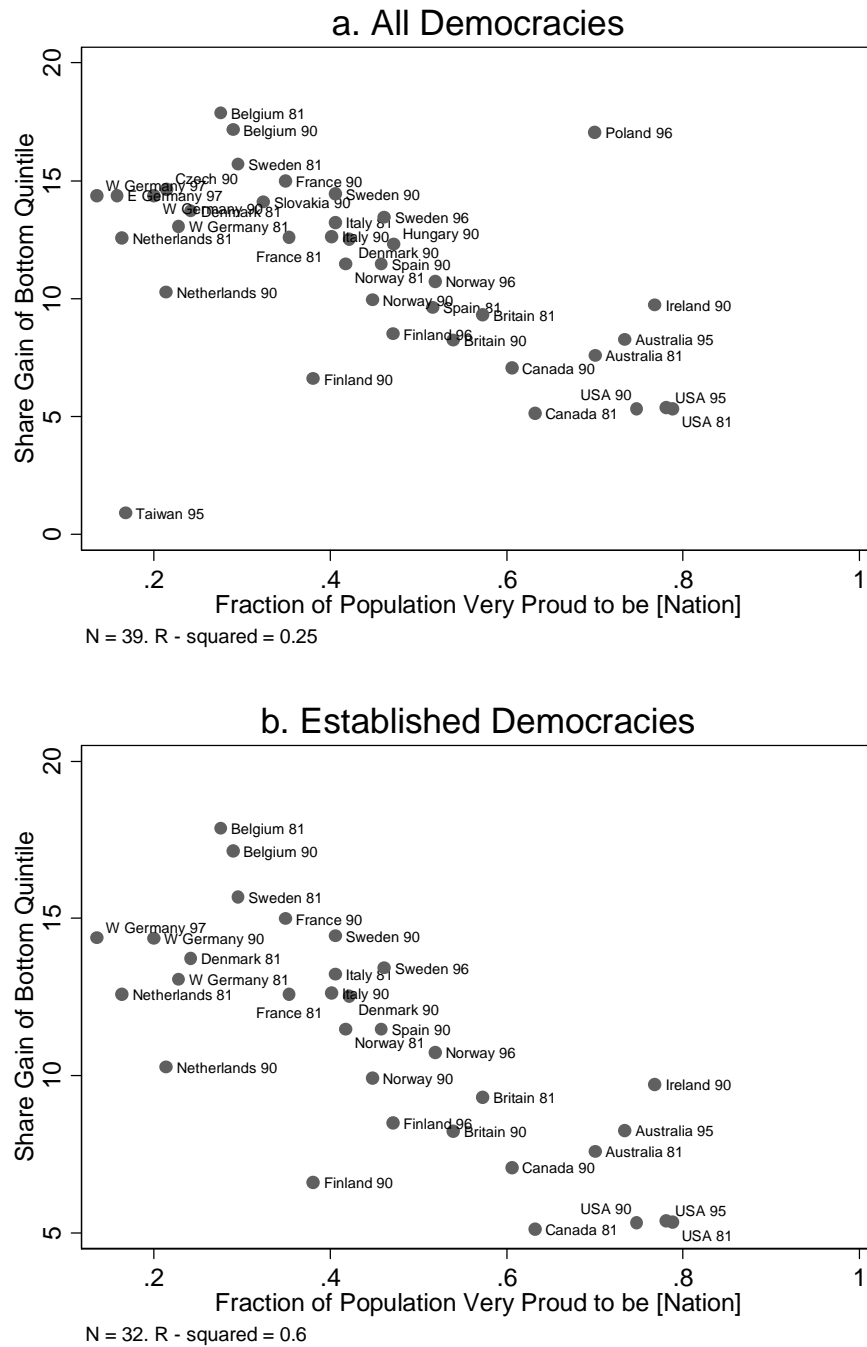
1. WVS data. Locally weighted regressions, Fan (1992), with quartic kernels.
2. Support for redistribution is on a 1 to 10 scale and is measured relative to the level of inequality in the specific country and year (see text for details).
3. Each survey population is divided according to whether respondents are “very proud” to be members of their nation (the highest possible level) or not. The solid line is the regression function of support for redistribution among the very proud. The dashed line is that regression for respondents with lower national pride.
4. Household income is in local currency, bandwidths vary accordingly from 0.3 in Britain and West Germany to 0.9 in Turkey. The top or bottom income category is dropped if it contains less than 1% of the relevant sample. Thus the bottom category is dropped in USA 95 and the top category is dropped in Brazil 90, Hungary 90, India 90, Italy 90, Spain 96, Turkey 90, USA 90 and Venezuela 96. Both top and bottom 1% are dropped in Macedonia 97. The observed hump shapes in Finland 90 and Sweden 96 are due to the bottom category, containing 15 (2.3%) and 14 (2.6%) observations respectively. The hump shape in USA 95 is due to the second category, with 71 observations.
5. Economies are divided into “Advanced” and “Less Advanced” according to whether real GDP per capita (PWT 6.1) is less than 50% of USA real GDP per capita. E. Germany 90 is classified as advanced using either PWT 5.6 for E. Germany 1988 or PWT 6.1 for Germany 1990.

Figure 4: Redistribution and National Identity: ISSP data



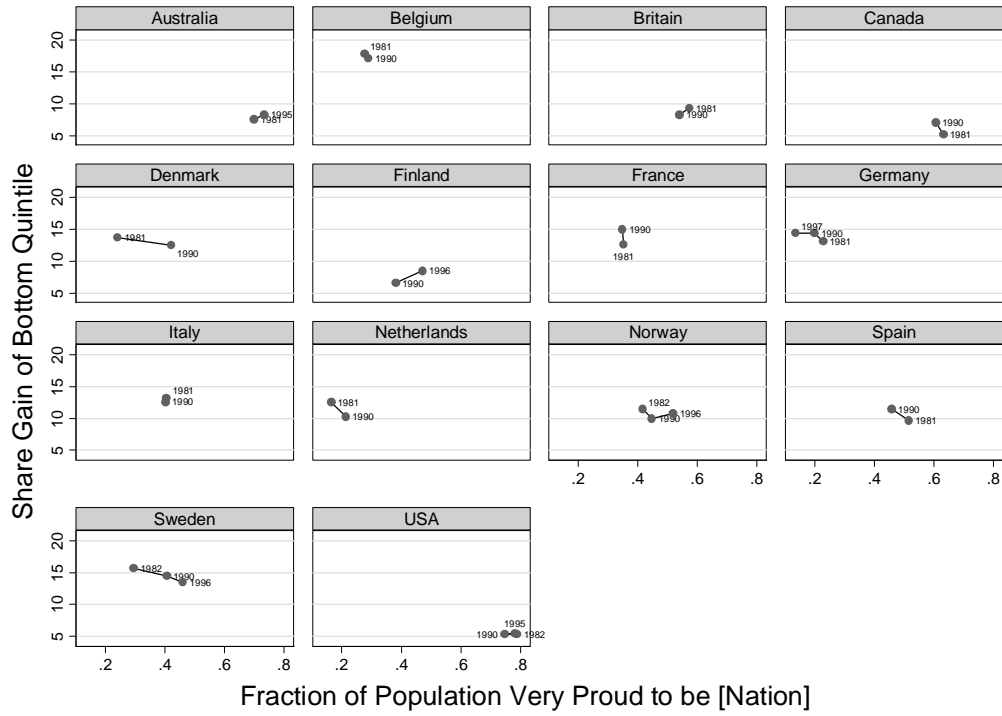
National identity scale from ISSP 1995 (see text for details). Share gain from LIS (Milanovic 2000). A country is a “Democracy” if its combined Polity IV score is at least 6. It is an “Established Democracy” if the number of years since the most recent regime change (Polity IV Regime Durability) is at least 10. Post-unification West Germany is coded as an established democracy.

Figure 5: Redistribution and National Identity: WVS data



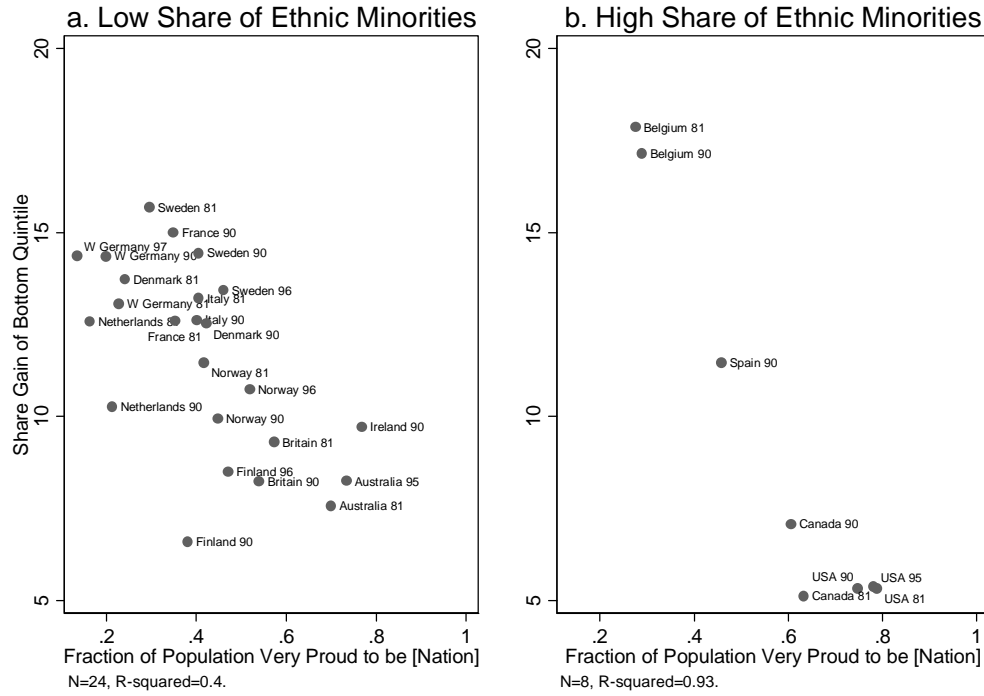
Fraction very proud from WVS waves 1-3. Share gain from LIS (Milanovic 2000). A country is a “Democracy” if its combined Polity IV score is at least 6. It is an “Established Democracy” if the number of years since the most recent regime change (Polity IV Regime Durability) is at least 10. The Czech and Slovak republics in 1990 are coded as democracies. Post-unification West Germany is coded as an established democracy.

Figure 6: Redistribution and National Identity Within countries Over Time



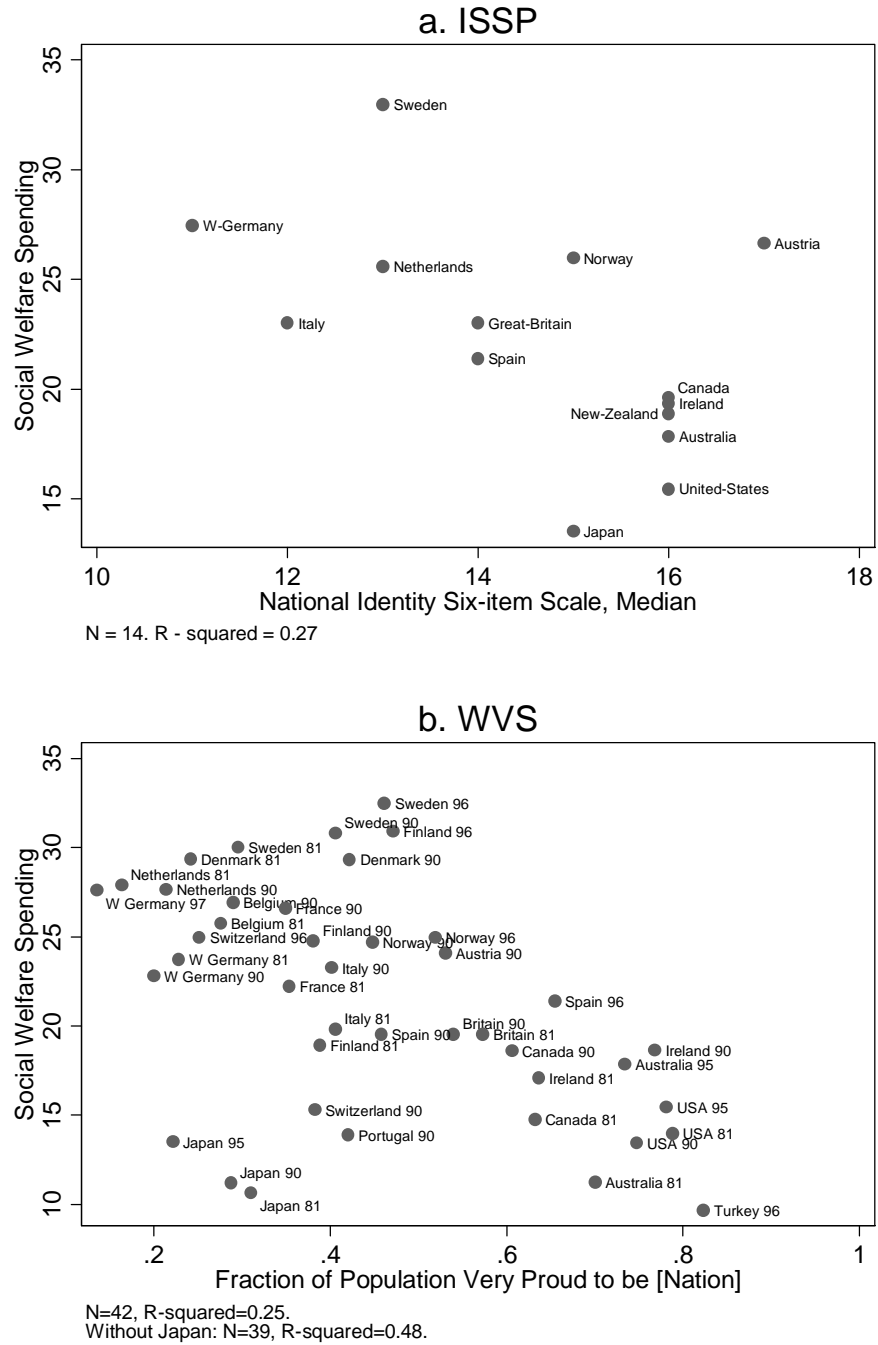
Fraction very proud from WVS waves 1-3. Share gain from LIS (Milanovic 2000). Germany WVS data are from West Germany.

Figure 7: Redistribution, National Identity and Ethnic Diversity



Fraction very proud from WVS waves 1-3. Share gain from LIS (Milanovic 2000). Share of ethnic minorities from Fearon (2003). Countries are divided into high and low share of ethnic minorities according to whether the largest ethnic group comprises at least 75% of the population. The figure shows established democracies only.

Figure 8: Social Expenditure and National Identity



Social Welfare spending is total social expenditure as percentage of GDP, from OECD (2004), Social Expenditure database (SOCX), 1980-2001. National identity scale is from ISSP 1995. Fraction very proud is from WVS waves 1-3. The figure shows established democracies only.