

Inequality, Labor Market Segmentation, and Preferences for Redistribution

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Abstract: *We formalize and examine two overlapping models that show how rising inequality combined with ethnic and racial heterogeneity can explain why many advanced industrial countries have experienced a drop in support for redistribution as inequality has risen. One model, based on altruism and homophily, focuses on the effect of increasing “social distance” between the poor and the middle class, especially when minorities are increasingly overrepresented among the very poor. The other, based on self-interest, combines an “insurance” model of preferences for redistribution with increasingly segmented labor markets, in which immigration of workers without recognized skills leaves most native workers better off but intensifies competition for low-end jobs. Empirically, when we estimate parameters from the two models using data from multiple waves of ISSP surveys, we find that labor market segmentation, previously omitted in this literature, has more consistent effects than social distance.*

Replication Materials: The data, code, and any additional materials required to replicate all analyses in this article are available on the *American Journal of Political Science* Dataverse within the Harvard Dataverse Network, at: <http://dx.doi.org/10.7910/DVN/NQOWDE>.

I ncreasing inequality over the past three decades highlights a major puzzle in political economy. While standard models (Meltzer and Richard 1981) predict demand for redistribution to rise, by most accounts wage inequality, structural unemployment, and insider-outsider divisions have grown more severe, with no offsetting expansion of redistribution and social protection (Huber and Stephens 2001; Korpi and Palme 2003; Rehm 2011; Rueda 2008). Public opinion in many advanced industrial countries has shifted against redistribution (Rehm, Hacker, and Schlesinger 2012). Georgiadis and Manning (2012) find that support for redistribution has dropped in Britain while inequality has been rising, and Cavaille and Trump (2015) show that while support for redistribution from the rich may have been flat, negative attitudes toward the poor have risen.¹

One emerging explanation of this phenomenon is that rising inequality undermines the sense of social affinity between the middle classes and the poor (Kristov, Lindert, and McClelland 1992; Lupu and Pontusson 2011). As the social “distance” between middle class and poor increases, support for redistribution among the former falls. This effect may be reinforced by immigration and rising ethnic heterogeneity if minorities are increasingly overrepresented among the poor (Alesina and Glaeser 2004). Rising social distance, combined with ethnic and racial heterogeneity, can explain why some inequalitarian countries have less popular support for redistribution even as inequality has risen (Dahlberg, Edmark, and Lundqvist 2012; Finseraas 2009, 2012).

In this article, we present an alternative explanation based on material self-interest. It is consistent with, and

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¹Latin American countries present a contrasting pattern where social protection for outsiders and the poor has grown; see Mares and Carnes (2009) and Garay (2010).

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has some empirical implications identical to, the evidence for the social affinity and heterogeneity theses outlined above. However, because it has very different microfoundations from the social distance model, it has very different implications for how to interpret the empirical evidence. The policy implications are also very different.

Our alternative combines an insurance model of preferences for redistribution (Barth, Finseraas, and Moene 2015; Iversen and Soskice 2001; Moene and Wallerstein 2001; Rehm 2009) with a theory of segmented labor markets (Esping-Andersen 1990, chap. 8; Goldthorpe 1984; Rueda 2005). In insurance models, demand for social spending is driven by individuals' exposure to risk, which varies with their education, industry, and occupation. Since social insurance is targeted to those without income, it also redistributes, so preferences for social insurance are related to preferences for redistribution.² Rehm (2009, 2010) has convincingly argued that when the risk distribution is right-skewed, an increase in its dispersion will reduce median voter support for redistributive social insurance (the median voter becomes less exposed to risk). In the Meltzer-Richard model, a right-skewed distribution of income instead implies that a rise in inequality will lead to more middle-class demand for redistribution. Since income and risk are inversely related, the median voter's demand depends on the exact relationship between income and risk. We therefore need to be explicit about the shape of the (negative) relationship between income and risk in order to understand the relationship between income and preferences. If it is sufficiently concave, risk is concentrated among the poor and rising inequality will be met with less support for redistribution in the middle classes. We find this pattern in our data.

A key component of our argument is that the income-risk relationship reflects and depends on labor market segmentation, particularly the extent to which technological and institutional conditions concentrate labor market risks on unskilled and semiskilled, low-paid workers. Segmentation has risen since the 1970s as the decline of "Fordist" mass production and the shift toward knowledge-intensive production have severed complementarities in production between skilled and semiskilled workers (Iversen and Soskice 2015; Wallerstein 1990). Deindustrialization has reinforced this process by gradually segregating many low-skilled workers into insecure, often part-time or temporary, jobs (Gingrich and Ansell 2012; Kalleberg 2003; Wren 2013). Employment protection legislation benefiting mostly skilled workers in full-time jobs probably reinforced this dualism (Rueda 2005,

2008). Immigration of workers without recognized skills in their host countries has added an ethnic-linguistic dimension to segmentation, creating more competition for low-end jobs while benefiting many skilled native workers who gain from lower prices on basic services like convenience stores or house cleaning.

These causes of labor market segmentation are fairly well understood. What is novel is that we model how segmentation affects the structure of preferences for redistribution. While segmentation is likely correlated with social distance and ethnic-linguistic heterogeneity, we model its effect on middle-class support for redistribution through an entirely different mechanism. We show how self-interest can account for a phenomenon often attributed to prejudice against the poor, whether the source is racial-ethnic heterogeneity or social distance. This matters for the diagnosis of the problem and for its solution.³

The rest of the article is organized as follows. We first formalize the social distance argument and then our alternative model of insurance with segmented labor markets. We show where the models overlap, and why they have identical empirical implications for some measures used to test both. Thus, lacking confidence that any potential instrument for each model can satisfy the exclusion restriction with respect to the other, we propose a suggestive "horse race" test, estimating parameters from both models using comparative public opinion data from multiple waves of the International Social Survey Program (ISSP). Moreover, we show that segmentation varies across countries and is correlated with ethnic divisions. Controlling for labor market risk and segmentation reduces and sometimes eliminates the effects of social distance and ethnic-linguistic heterogeneity: Previously published results based on these variables may therefore contain an omitted variable bias. We also show how macrolevel variation in labor market segmentation (i.e., the distribution of risk across income groups) alters the apparent impact of income on redistribution preferences. These results offer a complement to and an extension of Rehm's (2011) results for the dispersion of risk.

Two Models of Inequality and Redistribution

The two models described below share a common economic core. In both, we assume that there are two distinct groups: poor and nonpoor. We normalize the income of

²See Cusack, Iversen, and Rehm (2006), Anderson and Pontusson (2007), Rehm et al. (2012), and Margalit (2013).

³We do not reject the potential role of nonmaterial values. Altruism or "self-transcendence values" can complement or even compete with self-interest in explaining attitudes toward redistribution (Kulin and Svallfors 2013; Rueda and Stegmueller 2013).

the poor to 0, and we assume that they depend on transfer income, denoted b , from the state. The nonpoor have a market income y , where $b \leq y \leq 1$, that is at least as much as the transfer to the poor, to prevent “perverse” incentives among low-income nonpoor. There is a linear tax t on market income that finances the transfer to (only) the poor. Throughout, the size of the population is normalized to 1, and the share of the population that is nonpoor, Θ , is greater than one-half ($\Theta > .5$). The latter ensures that the majority (and hence the median voter) is nonpoor. What distinguishes the models is how we define *poor*. In the social distance model, the poor are those at the low end of the income distribution whether because of lack of education, bad neighborhoods, or missing opportunities for advancement. In the insurance model, we think of them as being in a “bad” state of the world because of bad luck, illness, unemployment, obsolete skills, or other misfortune that could befall the nonpoor as well. We show how this difference in the conception of poverty fundamentally changes how we explain support for redistribution, including the role of social distance and ethnic-racial heterogeneity, and how the competing explanations focus on explanatory variables that are likely to be colinear.

Social Distance Model

The social distance model introduces noneconomic motives to explain why people are more or less willing to redistribute to the poor. It assumes that people feel generous or altruistic toward the poor only if they have a sense of belonging or shared identity with them, whether the motive is religious, ethnic, or racial. Otherwise, support for redistribution will be low. This is most obvious in models of ethnic-racial heterogeneity (Alesina and Glaeser 2004; Gilens 2000), but the “anti-solidarity” motive—as Roemer, Lee, and Van der Straeten (2007) call it—can also be directed against the poor or the long-term unemployed because these groups are seen as very different in terms of lifestyle and shared experiences (Kristov, Lindert, and McClelland 1992; Lupu and Pontusson 2011). Such “distancing” may be exacerbated by deliberate attempts of people to set themselves apart from the poor, including support for policies that will reduce the relative standing of the poor (Luttmer 2001; Shayo 2009).

A model of prejudice captures the notion that redistribution is undermined by a lack of solidarity with the poor. Assume the structure of groups, incomes, taxes, transfers, and population as above. Assume further that the poor are permanently poor and that all transfers are purely redistributive. With these assumptions, there are no selfish reasons for the nonpoor to redistribute to the

poor, but they may do so out of a sense of affinity with, or altruism toward, the poor. Suppose the parameter α is a measure of affinity/altruism and takes on values between 0 (no concern for the poor) and 1 (people care as much about the income of the poor as they do about their own), so that $0 \leq \alpha \leq 1$. The utility function of a representative nonpoor voter is then

$$V = U[(1 - t) \cdot y] \cdot \Theta + \alpha \cdot U(b) \cdot (1 - \Theta). \quad (1)$$

$U(\cdot)$ is a concave utility function with standard properties: $U(0) = 0$, $U' > 0$, and $U'' < 0$.⁴ Note that we weight utility by population shares to allow altruists to care about others in proportion to their numbers.⁵ The benefit, b , is equal to the average tax take, $t \cdot \bar{y}$, where \bar{y} is average income (including the poor), divided by the share of poor people, $1 - \Theta$:

$$b = \frac{t \cdot \bar{y}}{1 - \Theta}. \quad (2)$$

For concreteness, assume that utility is the log of the weighted income of the poor and nonpoor, which is a convenient functional form (originally proposed by the 18th-century Swiss mathematician Bernoulli) that satisfies the standard properties.

Inserting Equation (2) into Equation (1), we then have

$$V = \ln[(1 - t) \cdot y] \cdot \Theta + \alpha \cdot \ln\left(\frac{t \cdot \bar{y}}{(1 - \Theta)}\right) \cdot (1 - \Theta). \quad (3)$$

Setting the first derivative equal to zero, the tax rate that maximizes the median, nonpoor, voter’s welfare is

$$t^* = \frac{\alpha \cdot (1 - \Theta)}{\Theta + \alpha \cdot (1 - \Theta)}. \quad (4)$$

If the nonpoor majority does not care about the poor, $\alpha = 0$, they will choose a tax rate of 0. This is equivalent to having a world of only selfish people (where the decisive voter is nonpoor). At the other extreme, if the nonpoor value the income of the poor as much as their own ($\alpha = 1$), they would tax to bring the poor up to the income of the lowest-paid nonpoor. If all nonpoor had the same income, this implies that they would choose a tax rate that equalizes the (after-tax) income of the poor. This result has the intuitively appealing implication that a pure altruist, who cares as much about others as she cares about herself, would equalize income. It is also equivalent to the tax a welfare-maximizing social planner would choose.

⁴We ignore any efficiency costs of taxation, which do not affect our key results.

⁵This weighting has no implications for our key results but is more in keeping with a commonsense understanding of altruism.

Using a log function for utility means that (the benefit constraint apart) income does not affect preferences. Because the marginal utility of money declines as the level of income rises, although the (altruistic) utility gain of a dollar spent on the poor is the same across the income scale, those with higher income are willing to pay more into the system than those with lower income. With a higher degree of concavity, income would be positively related to preferences. The opposite would be true if we decreased the degree of concavity.⁶ Income would also matter if we allowed benefits to be more or less targeted to the poor or to the nonpoor. The intuitive reason is that those who are not poor but have relatively low income would have a selfish motive to support redistribution if some of the benefits go to them. We allow this possibility below; for now, we keep the focus on altruism and prejudice.

Prejudice toward minorities is captured by assuming homophily: that people feel greater affinity toward members of their own group than toward members of other groups (Dahlberg, Edmark, and Lundqvist 2012). Low affinity, or social distance, is linked to traits seen as undesirable by the majority, which may include differences in race, ethnicity, language, and religion (Alesina and Glaeser 2004, chap. 6), as well as a range of behavioral attributes such as appearance (“clothes make the man”), consumption habits (e.g., smoking), or accents often linked to class. Here, these are all measures of social distance, and hence (inversely) altruism.

For simplicity, imagine that there are two groups, “whites” and “nonwhites,” and that whites are a majority: $w > .5$, where w is the share of the population that is white, and \bar{w} is the share that is nonwhite. Again assume that the nonpoor form a majority, but specifically that nonpoor whites are a majority, which is true whenever whites are not more likely to be poor and

$$\Theta \cdot w > \frac{1}{2}. \quad (5)$$

For example, if 10% of people are poor, (5) holds as long as more than 56% of the population is white. Assuming that all whites (and hence the median voter) are prejudiced against nonwhites ($\alpha_{\bar{w}} < \alpha_w$), the median voter’s utility function is

$$\begin{aligned} V = & \ln[(1-t) \cdot y] \cdot \Theta \\ & + \alpha_w \cdot \ln\left(\frac{t \cdot \bar{y}}{(1-\Theta)}\right) \cdot (1-\Theta) \cdot w_p \\ & + \alpha_{\bar{w}} \cdot \ln\left(\frac{t \cdot \bar{y}}{(1-\Theta)}\right) \cdot (1-\Theta) \cdot (1-w_p), \end{aligned}$$

⁶See Moene and Wallerstein (2001) for a proof in a mathematically equivalent case of insurance.

where w_p is the share of the poor who are white. To simplify the presentation, we set altruism toward the minority equal to zero, $\alpha_{\bar{w}} = 0$, so that the expression reduces to

$$\begin{aligned} V = & \ln[(1-t) \cdot y] \cdot \Theta \\ & + \alpha_w \cdot \ln\left(\frac{t \cdot \bar{y}}{(1-\Theta)}\right) \cdot (1-\Theta) \cdot w_p. \end{aligned} \quad (6)$$

From now on, α_w (or simply α) can be interpreted as the differential or “excess” feeling of affinity toward one’s own group compared to the outgroup. The optimal tax rate is then

$$t^* = \frac{\alpha \cdot (1-\Theta)}{\frac{1}{w_p} \cdot \Theta + \alpha \cdot (1-\Theta)}. \quad (7)$$

Since $w_p + \bar{w}_p = 1$, we can also express Equation (7) using the ratio of nonwhites to whites among the poor in the denominator:

$$\begin{aligned} t^* &= \frac{\alpha \cdot (1-\Theta)}{\Theta \cdot \left(1 + \frac{\bar{w}_p}{w_p}\right) + \alpha \cdot (1-\Theta)} \\ &= \frac{\alpha \cdot (1-\Theta)}{\Theta \cdot (1+d) + \alpha \cdot (1-\Theta)}, \end{aligned} \quad (7')$$

where $d = \bar{w}_p/w_p$ is the extent to which nonwhites dominate whites among the poor. Since the majority judge the deservingness of the poor by their race, d can be interpreted as a measure of social distance between the white majority and the poor. When $d = 0$, the poor are just like you (here, all white), and you choose a tax rate that reflects your level of altruism toward your own group. When d is high (it approaches infinity when \bar{w}_p approaches 1), the poor are very different from you, and you set a lower tax rate that will go to 0 when the share of nonwhites among the poor goes to 1.

The result has observable implications. At the individual level, it implies that the majority group will favor less redistribution as the minority proportion of the poor increases, that is, as social distance rises. At the macro level, a higher d implies a lower level of redistribution, again assuming the nonpoor majority group controls government. The majority will feel less altruistic toward the poor the more the poor belong to a group for whom the median voter M feels little affinity. This is the type of logic Lupu and Pontusson (2011) and Alesina and Glaeser (2004) use to explain cross-national variation in both redistribution and support for such redistribution.

Insurance Model with Segmented Labor Markets

The social distance model assumes that taxation and spending serve the purpose of redistribution. Yet, we

know that much social spending serves insurance purposes even if it also has redistributive consequences (Baldwin 1990; Barth, Finseraas, and Moene 2015; Iversen 2005, chap. 1; Moene and Wallerstein 2001). This is true of programs deliberately designed to replace lost income (e.g., unemployment or accident insurance and related cash transfers), active labor market programs (helping unemployed workers regain employment), and public healthcare and pension systems that guarantee benefits to individuals regardless of their employment status or income. Since such insurance is paid to those with no or little income, it is also redistributive. But while support for redistribution may not be observationally distinct from support for insurance, the motivational logic is very different.

To see why, recall that the previous model is static: Positions in the economy are given, no one becomes poor, and no one becomes a minority. Now, assume the same structure of groups, incomes, taxes, transfers, and population as before, but allow that people who are nonpoor may become poor, and vice versa. Specifically, in some period of time, the probability of a nonpoor person becoming poor is p , whereas the probability of upward mobility, of the poor escaping poverty, is q . For now, assume that p and q are the same for everyone, an assumption we relax below. With these assumptions, in a steady state equilibrium the number of nonpoor becoming poor in any period must equal the number of poor becoming nonpoor. This implies that $p \cdot \Theta = q \cdot (1 - \Theta)$, so $\Theta = q/(p + q)$ in equilibrium.

As is standard, we assume that the steady state has already been reached and that employed workers only look one period into the future when seeking to maximize their welfare across the (unobserved) “good” and “bad” states of the world.⁷ Assuming that majority-preferred policies for the next period are binding and that there is no discounting of the future, currently employed workers’ utility function can be represented by

$$V = U[(1 - t) \cdot y] \cdot (1 - p) + U\left(\frac{t \cdot \bar{y}}{(1 - \Theta)}\right) \cdot p. \quad (8)$$

Note that Equation (8) is nearly identical to Equation (3), except that the affinity parameter α has been replaced by the risk of poverty, p , and the share of poor and nonpoor does not matter directly. This is consequential: In the insurance model, even though $\alpha = 0$, the benefits received

by the poor matter because nonpoor voters care about their *own* income in the event they themselves become poor (say, because of unemployment or disability). The median voter “cares” about the poor, but for purely selfish reasons. A little tongue in cheek, we could say that people feel altruistic toward their future selves.

We use the same log utility function as before, which is also a convenient way to model risk aversion. Like all insurance models, the results depend on people being risk averse. The log function gives neat results because it implicitly assumes a constant relative risk aversion (RRA) of 1. With these assumptions in mind, the preferred tax rate of the median voter is simply

$$t^* = p. \quad (9)$$

The preferred tax rate is thus proportional to the risk of falling into poverty.⁸ As we noted above, with an infinite time horizon the steady-state share of unemployed would be equal to $1 - \Theta$, which is the share of time an employed worker could expect to be unemployed (again assuming that p and q are the same for all individuals). If people were infinitely lived and did not discount the future, we could therefore substitute $1 - \Theta$ for p in Equation (9), and the tax rate would be identical to the affinity model when $\alpha = 1$. This equivalence reflects that in the insurance model, people care equally about themselves whether they are employed or not. Yet, the micrologic could not be more different: In one model, redistribution occurs because people are selfish; in the other, it is because they are completely unselfish.

In Equation (8), the probability of becoming poor (and moving out of poverty) is assumed to be the same for all nonpoor. In reality, some jobs are risky while others are safe. We distinguish two types of jobs: bad ones (high risk of future loss of income or employment) and good ones (low risk). With a single-period model, we need only consider individual differences in p . In a multi-period world, we would also have to consider differences in q , but the fundamental logic and results would not change.

Suppose that there is uncertainty about how economic shocks affect industries and occupations. Consequently, workers do not know whether they are in good or bad jobs. If all workers have the same amount of

⁷Extending the time horizon does not change substantive results. For example, with an infinite time horizon, the probabilities of employment and unemployment converge to the above equilibrium rates, which we would then use instead of p . We return to this point below.

⁸In Equation (9), income has no direct effect. If $RRA > 1$, income would increase the demand for insurance, the basis for Barth, Finseraas, and Moene’s (2015) argument that rising inequality reduces support for the left. We focus on risk’s structure, including its relationship with income, while controlling for direct effects of income in the empirical analysis.

information, the risk of job loss is just a weighted (or “pooled”) average across the two types of jobs:

$$p_{pooled} = \delta \cdot p_{good} + (1 - \delta) \cdot p_{bad}, \quad (10)$$

where δ is the share of good jobs. The equilibrium tax rate in Equation (9) corresponds to this equilibrium: the rate that a Rawlsian welfare-maximizing social planner would choose behind the “veil of ignorance” before anyone knew whether they were in good or bad jobs.

In the real world, workers typically receive some information about the identity of good and bad jobs. Often that information is the result of bad jobs being correlated with observable traits: obviously skills, but also, directly or indirectly, race or ethnicity. Specifically, to continue the example from the previous section, imagine that nonwhites always end up in bad jobs and race is the only observable trait associated with bad jobs. Then the risk of whites ending up in bad jobs is lower, and this can be easily gauged from observing the composition of the poor (see Finseraas 2012).

As individuals acquire information about these risks, the low-information “pooled” equilibrium gives way to one where people know whether their risk is higher or lower than others’, and they behave accordingly. Suppose there are two partially overlapping labor markets, one for each race. Each market has a weighted average equilibrium across its good and bad jobs, but with different distributions of these jobs, and with nonwhites more likely to get the bad jobs. To capture the role of segmentation in this general case, and assuming the median voter is still white, we can write

$$\begin{aligned} t^* &= p_W = p_{av} \cdot \frac{p_W}{p_{av}} = p_{av} \cdot \frac{1}{w + \tilde{w} \cdot \frac{p_{\tilde{w}}}{p_W}} \\ &= p_{av} \cdot \frac{1}{1 + \tilde{w} \cdot (s - 1)}, \end{aligned} \quad (11)$$

where $p_{av} = w \cdot p_W + \tilde{w} \cdot p_{\tilde{w}}$, $p_{\tilde{w}}$ is the pooled equilibrium risk of poverty for nonwhites, p_W is the pooled equilibrium risk for whites, and $p_{\tilde{w}} > p_W$. Differences in unemployment risk across groups capture the notion that labor markets are segmented. Specifically, we treat $s = \frac{p_{\tilde{w}}}{p_W}$ as a measure of the segmentation between the white and nonwhite labor markets. Note that the effect of segmentation is magnified by the size of the minority group since minorities hold an increasing number of “bad” jobs. But as long as there are some nonwhites, so that $\tilde{w} > 0$, the tax rate preferred by the majority is lower than in the all-white pooled equilibrium. *We see that with labor market segmentation along racial lines, the composition of the labor force now matters for spending.*

Comparison of the Two Models

The two models have similar implications for the two key parameters, the effects of social distance (d) and labor market segmentation (s):

$$\frac{\partial t^*}{\partial d} < 0; \quad \frac{\partial t^*}{\partial s} < 0. \quad (12)$$

This similarity between d and s extends beyond their common effect on the majority-preferred tax rate. They are also likely to be correlated with each other. To see this in our example of race-based social distance or segmentation, consider the following expansion of the definition of d :

$$d = \frac{\tilde{w}_p}{w_p} = \frac{\frac{p_{\tilde{w}}}{p_{\tilde{w}+q}} \cdot \tilde{w}}{\frac{p_w}{p_w+q} \cdot w} = \frac{p_w + q}{p_{\tilde{w}} + q} \cdot \frac{\tilde{w}}{w} \cdot \frac{p_{\tilde{w}}}{p_w} = k \cdot s. \quad (13)$$

We see that greater race-based social distance implies more labor market segmentation. Our definition of social distance is expressed as the (steady-state) ratio of poor minorities to poor nonminorities, and that leads directly to our definition of segmentation times a factor k . What is social distance in one model can thus be interpreted as labor market segmentation in the other, and vice versa.⁹ *When exposure to risk is differentiated by ethnicity, or any other marker of social distance, the key result for the model of segmented labor markets is potentially observationally equivalent to the key result for the social distance model: Then identifying the two effects becomes impossible.*

This affects how to interpret the existing evidence. Alesina and Glaeser (2004), for example, interpret the negative effect on redistribution of ethnic-linguistic heterogeneity and race as a function of prejudice. But it is perfectly conceivable that labor markets segmented along ethnic-linguistic lines could be to blame. Rueda (2008) attributes declining support for redistribution to growing insider-outsider divisions, which could be an aspect of s . Alternatively, it could capture d if labor market segmentation increases with social distance. Social distance is also the key to Lupu and Pontusson’s (2011) argument, but they do not consider how labor market segmentation is related to growing social distance. Rehm (2009, 2011) focuses on inequality of the risk distribution, which is

⁹Note that since the numerator of k is p_w plus a constant and the denominator of k is $p_{\tilde{w}}$ plus a constant, k must be inversely related to $s = \frac{p_{\tilde{w}}}{p_w}$. But it is easy to see that an increase in s will be associated with a less than proportional decline in k , so d is monotonically rising and falling in s and vice versa.

related to s , but he does not control for social distance, and so on. Consequently, two important literatures ignore each other, and each could bias its conclusions by omitting key variables.

Model Extensions with Income

In testing the models, an obvious starting point is the direct effects on (majority) preferences of social distance and segmentation implied by Equation (12). But we can do better. With a small modification in the basic setup, we also test the implication that social distance and segmentation affect how income is related to preferences. From the perspective of the poor or the unfortunate, redistribution is desirable regardless of social distance or segmentation since they are the direct beneficiaries. So social distance and segmentation only affect the preferences of the nonpoor or the fortunate, not the poor. With only two income groups (those with and without income), this implies that the relationship between income and preferences for redistribution will be affected by social distance and segmentation. We ignored this above because we only considered preferences among the nonpoor, but we can generalize the intuition by allowing some transfers to benefit the nonpoor/fortunate. By doing so, we introduce mixed motives (i.e., redistribution and insurance) across the income distribution, and income will now matter for preferences among the nonpoor.

In the social distance model, the utility function of the poor is

$$V = \ln \left(\frac{t \cdot \bar{y}}{(1 - \Theta)} \right) + \alpha \cdot \ln \left(\frac{t \cdot \bar{y}}{(1 - \Theta)} \right) \cdot (1 - \Theta).$$

The first term is their direct benefit from redistribution; the second term is the indirect benefit from feeling solidaristic with other poor (a feeling and term they share with the nonpoor). Because utility is a continuously increasing function of t , the poor always want redistribution up to the maximum, regardless of α . The composition of the poor, and hence what we have called social distance, does not matter for the preferences of the poor.

But α does matter for the preferences of the nonpoor. With only poor and nonpoor, the effect of income on preferences is negative, and the slope is increasing in social distance. This logic can be generalized to a world where there are people between poor and rich who also benefit from transfers while paying into the system to support those below them. We capture this by allowing a share of transfers to go to the nonpoor, producing the fol-

lowing modified utility function of all nonpoor (compare to Equation 6):

$$V = \ln \left((1 - t) \cdot y + \gamma \cdot \frac{t \cdot \bar{y}}{\Theta} \right) \cdot \Theta + \alpha \cdot \ln \left((1 - \gamma) \cdot \frac{t \cdot \bar{y}}{1 - \Theta} \right) \cdot (1 - \Theta), \quad (14)$$

where the first term is (the log of) income after taxes and transfers, and the latter is a flat-rate benefit to all nonpoor. The parameter γ is the share of benefits going to the nonpoor (assumed exogenous).

Without altruism and benefits going to the nonpoor, Equation (14) reduces to a Meltzer-Richard type of model without efficiency costs of taxation. In that world, those below the mean want maximum redistribution and those above want no redistribution. With altruism, those above the mean may, however, support redistribution because of solidarity with people below. For this group, there is an optimal tax rate found by setting the first-order condition equal to zero (see Part 3 of the supporting information for a step-by-step derivation):

$$t^* = \frac{\alpha \cdot r}{\frac{r \cdot \Theta - \gamma}{1 - \Theta} \cdot (1 + d) + \alpha \cdot r - \alpha \cdot \frac{\gamma}{\Theta}}, \quad (15)$$

where $r = y/\bar{y} > 1$ is relative income, and where social distance, d , is defined as before.

With any targeting toward the poor, the share of benefits going to the nonpoor is less than the population share of nonpoor ($\Theta > \gamma$) and social distance must reduce preferred spending (the first term in the denominator is positive and rises with d), just as before. But now there is an additional set of testable implications, namely, that income is negatively associated with preferences and that, critically, this effect is magnified by social distance:

$$\frac{\partial(\partial t^*/\partial \gamma)}{\partial d} < 0. \quad (16)$$

This cross-partial holds above-average income. Those below average income will either want maximum redistribution (like the poor) or, if not, the same cross-partial holds. The intuition is that it is only when altruism is high, and social distance low, that those with higher income are willing to support redistribution. For a similar argument, see Rueda (2014).

An analogous logic applies to the insurance model. When some benefits go to the employed, their utility function is modified to

$$V = \ln \left[(1 - t) \cdot y + \gamma \cdot \frac{t \cdot \bar{y}}{\Theta} \right] \cdot (1 - p) + \ln \left((1 - \gamma) \cdot \frac{t \cdot \bar{y}}{(1 - \Theta)} \right) \cdot p. \quad (17)$$

Similar to the social distance case, if there are no unemployed (so all benefits go to the employed), we again arrive at a Meltzer-Richard type of model with no tax disincentives: Those below the mean want maximum taxation. But if there are unemployed and the share of benefits targeted to the unemployed is sufficiently high, there is a preferred tax rate lower than the maximum. Setting the derivative of Equation (17) with respect to t equal to zero, this rate is found to be (see Part 3 of the supporting information for a step-by-step derivation)

$$t^* = p \cdot \frac{r}{r - \frac{\gamma}{\Theta}}. \quad (18)$$

As before, preferences for taxation rise with the risk of unemployment, but they also now depend on relative income since some spending goes to the employed and benefits those with lower income disproportionately.

Finally, we can find the preferences of the majority group by substituting their risk of poverty, $p_W = p_{av} \cdot \frac{1}{1 + \bar{w} \cdot (s-1)}$ (from Equation 11), into Equation (18):

$$t^* = p_{av} \cdot \frac{r}{[1 + \bar{w} \cdot (s-1)] \cdot (r - \frac{\gamma}{\Theta})}. \quad (19)$$

As in the base model, segmentation reduces the demand for taxation, but now the effect rises in income. So just as in the case of the distance model, we can establish the following testable cross-partial for the modified insurance model:

$$\frac{\partial(\partial t^* / \partial \gamma)}{\partial s} < 0. \quad (20)$$

As segmentation rises, the effect of income is to reduce support for redistribution more.

Estimation and Data

The Estimating Equation

Our amended model implies a simple statistical horse race model, where the key variables are social distance, segmentation, and their interactions with income:

$$t_{i,t}^* = \beta_1 \cdot s_{j,t} + \beta_2 \cdot d_{j,t} + \beta_3 \cdot y_{i,j,t} + \beta_4 \cdot s_{j,t} \cdot y_{i,j,t} + \beta_5 \cdot d_{j,t} \cdot y_{i,j,t} + \lambda_j + \mu_t. \quad (21)$$

The index variables λ_j and μ_t denote country and year fixed effects, respectively. Note that the segmentation and distance variables only vary by country-year, and sometimes only by country (as specified below for each indicator). The hypotheses to be tested are

$$\beta_1 = \frac{\partial t^*}{\partial s} < 0, \beta_2 = \frac{\partial t^*}{\partial d} < 0, \beta_3 = \frac{\partial t^*}{\partial \gamma} < 0,$$

$$\beta_4 = \frac{\partial(\partial t^* / \partial \gamma)}{\partial s} < 0, \text{ and, } \beta_5 = \frac{\partial(\partial t^* / \partial \gamma)}{\partial d} < 0.^{10}$$

We also include some individual-level variables to help account for risk exposure and altruism, as well as a set of controls, as explained next.

Data

To estimate Equation (21), we lack individual-level preferences for taxation, but instead employ a survey question about support for redistribution. Consecutive waves of the ISSP consistently asked a question that we use as our dependent variable, *redistribution preferences*: “On the whole, do you think it should be or should not be the government’s responsibility to: Reduce income differences between the rich and poor?” Respondents could answer 1. *Definitely should be*; 2. *Probably should be*; 3. *Probably should not be*; and 4. *Definitely should not be*.¹¹

Turning to explanatory variables, we base segmentation on differences in risk across income groups. The risks are measured as occupational unemployment rates, following Rehm (2011). Their relationship with income, measured in nine equally sized quantiles, is virtually linear (see the supporting information, Part 4, figure SM1), with a linear correlation by income quantile of 0.93. Because the relationship between income and occupational unemployment rates is so nearly linear, we can measure segmentation of risk as the ratio of risks of any high- and low-income groups (analogous to the ratio of risk in the theoretical model). We use the ratio of occupational risks in the top and bottom four income groups to minimize measurement error.

To capture individual heterogeneity in unemployment risk within income groups, we include *risk_within*, defined in each income group as an employed person’s occupational unemployment rate minus average risk within the group. To further control for individual differences in

¹⁰Strictly, with an interactive model, the first two hypotheses require $\beta_1 + \beta_4 | (y = \bar{y}) < 0$ and $\beta_2 + \beta_5 | (y = \bar{y}) < 0$; we test this below.

¹¹See Part I of the supporting information for details and sources and Part 2 for countries and years of fieldwork and summary statistics. Some ISSP surveys used five answer categories, with the middle one being neutral. To maximize coverage, we include the five-category variable where possible, assigning the middle group to be “mildly opposed,” which best matches the distribution of answers on the four-category variable. The distribution on the resulting four-category variable is as follows: (a) strong support (24%), (b) weak support (33%), (c) weak opposition (31%), and (d) strong opposition (12%). It makes no significant difference to our results if we classify the middle group as mildly in favor instead. We exclude some respondents who did not answer the question or said they did not know.

risk exposure, we also include a measure of *skill specificity* (as defined in Cusack, Iversen, and Rehm 2006), capturing greater risk of long-term unemployment, or income loss, if workers have nonportable skills (Iversen and Soskice 2001). Finally, we control for actual current individual *unemployment* and the average unemployment rate in each country-year.

For social distance—the opposite of affinity—we employ three indicators. Two are already in the literature: *skew* of the earnings distribution (Lupu and Pontusson 2011), inverted below to measure *income distance*, and the index of *ethnic fractionalization* from Alesina et al. (2003). We used the OECD’s database on gross earnings of full-time employees (OECD no date) to estimate the skew for each country-year panel calculated as the ratio of d9:d5 to d5:d1 earnings. *Ethnic fractionalization*, defined as 1 minus the Herfindahl index of ethnic group shares, captures the extent to which electorates are divided by ethnicity, representing the probability that an individual from one ethnic group randomly meets someone from a different group. If (like Alesina et al. 2003) we assume that minorities are overrepresented among the poor, then fractionalization is a measure of social distance, which (again) in our model is defined as the ratio of majority to minority individuals among the poor. Our efforts to create a time-varying version of this variable were unavailing (see Kahanec and Zimmermann 2011).

The third, *minority self-designated*, is an individual’s self-designation into ethnic minority status. We code individuals who report nonnative status or non-Anglo status as ethnic minorities, imputing nonminority status to all individuals who did not explicitly flag themselves as minorities.¹² This produces an ordering of country samples of minority population in line with actual population figures, but only about 6% self-identify as minorities, so this procedure most likely assigns nonminority status to many who in fact are minorities. The variable is only available for a subset of country-years, but we still use it in two ways: first as an individual-level variable to ensure that our analysis relates to majority preferences for redistribution, and second as a macro-variable *minority share of poor*, measuring their overrepresentation among the poor in our sample. The *minority share of poor* corresponds to the model’s definition of social distance: It is panel-level data, 30 panels, about half of which are in the United States. Data limitations force us to define *poor* as those in the bottom third of the income distribution.

¹²The question was not always included, and question formats vary across different countries. See Part 2E of the supporting information. That may not operationalize social distance equally well in all countries.

According to our self-designated minority variable, minorities are substantially overrepresented in the bottom three income categories in nearly all countries. Moreover, the cross-country correlation between *minority share of poor* and fragmentation (only available by country) is .61. We interact *minority self-designated* with *minority share of poor* to examine directly its contextual effect on majority preferences for redistribution.

The distance and segmentation variables are interacted with the nine income quantiles, treated as an ordinal variable with indicators coded 1 at each income level, to allow for nonlinearities.¹³ In addition to these theoretical variables, we control for *age* in years, gender (*female* = 1), *education* (degree level), and whether a person is outside the labor market (*nonemployed*) or is a *student*. Summary statistics are in Part 2 of the supporting information. All models include country and year fixed effects, the former to allow unobserved heterogeneity and the latter to account for changes affecting all countries the same way in a given year. Standard errors are clustered by (country-year) panel and by income (because income is a grouped variable), for a total of 470 clusters. Because our dependent variables are ordinal, we estimate throughout with ordered logit, except when deliberately simplifying for presentational purposes. Fixed effect estimates in ologit can be inconsistent: We confirm Table 1 with a comparable linear probability model in Part 8 of the supporting information.

Estimation Results

Full Model

We first estimate Equation (21) with all variables included. The dependent variable is redistribution preferences, and there are 58,315 respondents. This produces the results in Table 1. All three risk variables have statistically significant effects, with signs as expected, so each measure of risk contributes to increasing preferences for redistribution, other things equal. Moreover, the coefficients of the interaction of segmentation and income are negative, increase as income rises, and are clearly more significant at above-average incomes. In the insurance model, greater segmentation is expected to be associated with a more negative slope (Equation 20, the key

¹³This is particularly important in the Lupu-Pontusson (2011) model because skew only affects the relative position of the middle-income group. As skew decreases, and distance between the poor and middle increases, the effect of income rises. But that it not the case for higher incomes.

TABLE 1 Individual Preferences for Reducing Income Differences between Rich and Poor

Main Variables and Controls	Coef. and SE	Interactions with Income	Coef. and SE	Year FEs	Coef. and SE	Country FEs and Cutpoints	Coef. and SE
Segmentation	-1.268* (0.563)	Income (2) × Distance	-0.739 (0.621)	1987	-0.165 (0.154)	Canada	0.282 (0.146)
Risk_within	0.030*** (0.003)	Income (3) × Distance	-0.487 (0.578)	1990	-0.129 (0.173)	United Kingdom	0.908*** (0.097)
Skill specificity	0.056*** (0.010)	Income (4) × Distance	-0.654 (0.619)	1991	0.256 (0.166)	Ireland	1.018*** (0.222)
Income group 2	1.548 (0.948)	Income (5) × Distance	-0.538 (0.446)	1992	-0.185 (0.160)	Switzerland	0.380*** (0.085)
Income group 3	1.989* (0.918)	Income (6) × Distance	-0.807 (0.626)	1993	-0.405* (0.163)	Spain	1.954*** (0.215)
Income group 4	1.075 (1.057)	Income (7) × Distance	-0.061 (0.649)	1996	-0.026 (0.164)	Portugal	1.991*** (0.236)
Income group 5	1.161 (0.867)	Income (8) × Distance	-0.789 (0.567)	1997	-0.826*** (0.250)	Germany	0.911*** (0.117)
Income group 6	2.150* (0.916)	Income (9) × Distance	-0.667 (0.985)	1998	0.018 (0.175)	Finland	1.355*** (0.124)
Income group 7	2.194* (1.006)	Income (2) × Ethnic. Frag.	-0.138 (0.326)	1999	-0.474** (0.178)	Sweden	0.923*** (0.128)
Income group 8	2.386* (0.936)	Income (3) × Ethnic. Frag.	-0.051 (0.291)	2000	-0.337* (0.168)	Norway	1.135*** (0.125)
Income group 9	0.674 (1.525)	Income (4) × Ethnic. Frag.	-0.297 (0.325)	2001	-0.382* (0.189)	Denmark	0.202 (0.149)
Income distance	0.421 (0.628)	Income (5) × Ethnic. Frag.	-0.216 (0.302)	2006	0.047 (0.167)	Australia	0.479*** (0.120)
Minority self-designated	0.552*** (0.047)	Income (6) × Ethnic. Frag.	-0.429 (0.306)	2007	0.143 (0.208)	New Zealand	0.461*** (0.081)
Unemployment rate	0.014 (0.012)	Income (7) × Ethnic. Frag.	-0.057 (0.304)	2008	0.440* (0.217)	Cutpoint 1	
Age (continuous)	-0.000 (0.001)	Income (8) × Ethnic. Frag.	-0.453 (0.299)	2009	-0.168 (0.168)	Constant	-3.563*** (0.939)
Educational degree	-0.141*** (0.017)	Income (9) × Ethnic. Frag.	0.138 (0.429)	2010	-0.652*** (0.165)	Cutpoint 2	
Female	0.254*** (0.019)	Income (2) × Segmentation	-0.640 (0.694)			Constant	-1.615 (0.939)
Unemployed	0.288*** (0.050)	Income (3) × Segmentation	-1.265* (0.612)				
Nonemployed	-0.077** (0.029)	Income (4) × Segmentation	-0.509 (0.700)			Cutpoint 3	
Student	-0.121* (0.056)	Income (5) × Segmentation	-0.755 (0.633)			Constant	0.046 (0.938)
		Income (6) × Segmentation	-1.358* (0.657)				
		Income (7) × Segmentation	-2.085** (0.704)				
		Income (8) × Segmentation	-1.840** (0.688)				
		Income (9) × Segmentation	-0.974 (1.029)				

Note: Observations = 58,315; Clusters = 470; Wald $\chi^2(73) = 5,350.61$ ($p < .00001$); Pseudo $R^2 = 0.0709$. Income(1), 1985, and United States are categories omitted in estimation. *** $p < .001$, ** $p < .01$, * $p < .05$.

cross-partial, should be negative): This appears to be the case, and a formal test confirms it (see below).

It is easier to see this in a graphical presentation. Figure 1a summarizes the impact of segmentation on the predicted probability of supporting redistribution (on the vertical axis). The upper (lower) line is for a labor force with 5th (95th) percentile segmentation, each with the 95% confidence interval shaded. The lines are kinked because the marginal effect of income differs in each income group. The lines nearly meet at the lowest income (the confidence intervals overlap), but they grow significantly separate as income rises, with low segmentation (i.e., more uniform risks faced by all) associated as expected with higher overall support for redistribution. A chi-squared test strongly ($p < .0001$) confirms the expectation that $\beta_4 = \frac{\partial(\partial t^*/\partial y)}{\partial s} < 0$ when comparing the two lines in Figure 1. Moreover, for the distribution as a whole, the average effect of moving from 5th to 95th percentile segmentation reduces support for redistribution by an average of about 15 percentage points, or about one-third of a standard deviation of the dependent variable. That is quite remarkable considering that the result is based entirely on intra-country time variation. Because income groups are defined as quantiles, this average marginal effect also implies that $\beta_1 = \frac{\partial t^*}{\partial s} < 0$. Also as expected, the effect is slightly stronger if we reestimate Table 1 for ethnic or non-poor majorities only (supporting information, Part 5).

The effects of the social distance variables in Table 1 evidently vary. Our measure of minority self-designation is significant and positive, so thinking of one's self as a minority is associated with greater support for redistribution, relative to the majority: The increase in very strong support is about 10 percentage points. This result may be taken to mean that minorities feel greater solidarity with the poor because minorities are overrepresented among the poor. Yet, neither of the other social distance variables provides much support for the affinity model. Because the measure of ethnic fragmentation in Alesina et al. (2003) does not vary over time, any direct effect is absorbed into the country fixed effects; as a result, the variable appears only as an interaction with income. Almost all interactions are negative, as expected, so across incomes more fragmentation produces less support for redistribution, but not statistically significantly, individually or jointly. As Figure 1b shows, *income distance* is inconsistently associated with support for redistribution; this also does not change significantly as income increases, and confidence intervals for the 5th and 95th percentiles of the distance variable overlap at all income levels. Hence, since there is no difference at any income level, there is clearly also no average difference, so neither $\beta_5 = \frac{\partial(\partial t^*/\partial y)}{\partial d} < 0$

nor $\beta_2 = \frac{\partial t^*}{\partial d} < 0$ is supported, and this is also true if we consider only ethnic and nonpoor majorities (supporting information, Part 5). So far, the horse race clearly favors the insurance model and segmentation over affinity and distance.

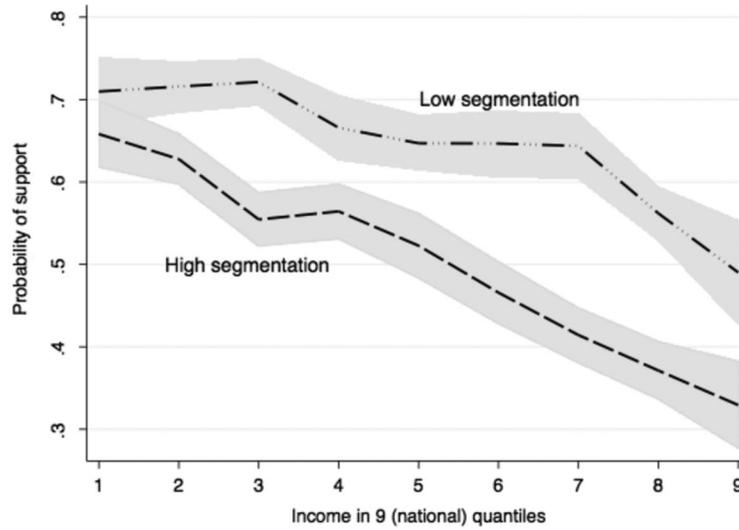
Turning to controls, in Table 1, possessing a college degree, being out of the workforce, and being a student reduce support for redistribution; being female or being currently unemployed increases it (consistent with existing results in the literature). Independent of all the rest, age and the unemployment rate in the country-year have small, insignificant effects. The indicator variables for each income group are inconsistently signed and never significant, but when including the interactions the effect of income is negative. The country fixed effects pick up all the cross-national differences (relative to the United States, the omitted dummy) not captured by the substantive variables. As is well known, support for redistribution is generally higher outside the United States. The time fixed effects (relative to 1985) are never significantly positive and are occasionally significantly negative, but there is no obvious pattern (despite, one may note, the well-documented rise in inequality). The fit of the model is satisfactory for these types of data (a pseudo- R^2 of .07) and statistically significant. The cutpoints (i.e., estimated boundaries between predicted categorical locations of each observation) are roughly symmetric, with lowest and highest cutpoints about equidistant from the predicted boundary between support and opposition.

Does social distance fare better in the literature because risk is relevant yet omitted? We reestimated the model in Table 1 separately for the risk and distance variables, noting that country-level correlations make bias a possibility. Results appear in Part 6 of the supporting information, estimated for all available observations in each case.¹⁴ Omitting risk makes the affinity model look better: Now the average marginal effect of *distance* significantly steepens the downward slope of income, even though differences within income groups remain insignificant. In this respect, the results support Lupu and Pontusson's (2011) macrolevel model. Minority status is largely unchanged. *Ethnic fractionalization* is also negative at all income levels, sometimes significantly, so fragmentation is associated with less support for redistribution, as expected in Alesina and Glaeser's (2004) ethnic-racial

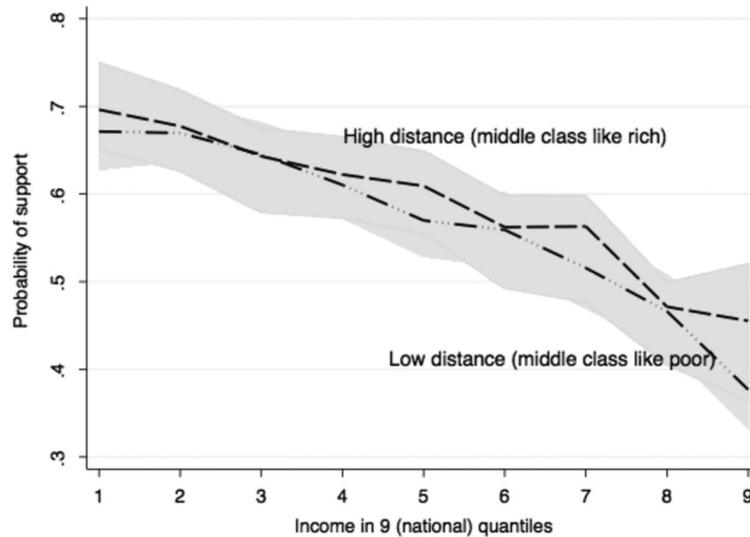
¹⁴Including social distance removes 30% of the cases with risk information; including labor market data removes 40% of the distance-available observations. See Parts 2B and 2C of the supporting information.

FIGURE 1 The Estimated Probability of Agreeing with Redistribution as a Function of Income (Regressions Combine Risk Variables and Social Distance)

(a) By labor market segmentation



(b) By social distance



heterogeneity model. But this effect, like the effect of *distance*, disappears when we include the risk variables in Table 1. By contrast, estimates from the “pure” insurance model resemble the combined model: Higher *segmentation* significantly steepens the downward slope with respect to income, whereas effects of the other risk variables are positive. These results suggest that omitted variable bias is more serious in the “pure” affinity model estimates, reaffirming that affinity and risk models should not be evaluated separately; they are theoretically and empirically intertwined.

Minority Status, Risk, and Affinity

The interactions of self-designated minority status and the share of minorities among the poor (and income) reveal more about the role of social distance. Table 2, column 1 repeats the main variables of interest from Table 1 for the restricted sample in which minority status was most evidently probed.¹⁵ The effects of risk variables

¹⁵The unchanged estimate for self-designated minority status suggests minimal measurement error caused by including it in Table 1. In the restricted sample, about 10% self-identify as minorities.

TABLE 2 Minority Self-Designation and Preferences for Redistribution

Main Variables and Controls	(1) Coef. and [SE]	(2) Coef. and [SE]
Segmentation	-0.552 (0.533)	-0.660 (0.493)
Risk_within	0.033*** (0.004)	0.033*** (0.004)
Skill specificity	0.041** (0.013)	0.041** (0.013)
Income group 2	2.200 (1.189)	2.040 (1.232)
Income group 3	1.674 (1.490)	1.634 (1.406)
Income group 4	0.417 (1.350)	0.235 (1.384)
Income group 5	1.216 (1.291)	1.074 (1.251)
Income group 6	2.050 (1.473)	1.921 (1.419)
Income group 7	1.884 (1.201)	1.754 (1.215)
Income group 8	0.818 (1.258)	0.680 (1.241)
Income group 9	0.999 (1.943)	0.980 (1.907)
Income distance	-2.099* (0.852)	-3.461*** (0.921)
Minority self-designated	0.551*** (0.050)	0.277** (0.107)
Minority share of poor		-1.492*** (0.412)
Minority x Min. Shr. Poor		1.408** (0.535)
Unemployment Rate	0.014 (0.022)	0.053* (0.025)
Age (continuous)	-0.001 (0.001)	-0.001 (0.001)
Educational degree	-0.210*** (0.022)	-0.211*** (0.022)
Female	0.246*** (0.027)	0.247*** (0.026)
Unemployed	0.259*** (0.056)	0.259*** (0.056)
Non-Employed	-0.126*** (0.036)	-0.125*** (0.036)
Student	-0.123 (0.072)	-0.121 (0.072)

(Continued)

TABLE 2 (Continued)

Main Variables and Controls	(1) Coef. and [SE]	(2) Coef. and [SE]
Cutpoint 1		
Constant	-5.108*** (1.080)	-6.608*** (1.166)
Cutpoint 2		
Constant	-3.074** (1.080)	-4.573*** (1.163)
Cutpoint 3		
Constant	-1.432 (1.077)	-2.929* (1.159)
Observations	31604	31604
Clusters	261	261
Pseudo R ²	0.077	0.077

Note: Interactions, Fixed Effects included but not shown. Full results in Supplementary Materials. ***p < .001, **p < .01, *p < .05.

and controls look much as before, as do the insignificant effects of income and its interactions with distance and fragmentation (supporting information, Part 7). In column 2, the effects of *minority share of poor* and its interaction with *minority self-designated* (second column) are both significant, with opposite signs. For the majority, a growing minority share among the poor reduces preferences for redistribution (the direct effect of minority share since the interaction is zero). The equal magnitude of the coefficients cancels out that effect for minorities, whose relatively greater preference for redistribution is unaffected by minority concentration, and the joint effect is actually positive outside the United States (supporting information, Part 7). At least outside the United States, the minority result resembles homophily, but it is hard to draw strong inferences. These results overall offer some more support for the Alesina-Glaeser (2004) argument.

Robustness of the Estimates

Part 8 of the supporting information provides evidence of the stability of our main results. Reestimating the Table 1 model with country-year (panel) fixed effects leaves intact the substance of our conclusions despite assigning more variation to the idiosyncracies of individual panels: Standard errors, clustered by panel in Table 1, are unaffected. Adding Rehm's (2011) seven-code left-right scale to represent the (obvious) mutual relationship between partisanship and preferences for redistribution reveals that a left-right variable indeed significantly predicts

preferences, but it has little effect on our substantive conclusions from Table 1. Indeed, that same pattern, a significant effect of partisanship and no qualitative effect on other results, holds for every other specification in this article. Dropping extreme cases does not have much effect either, whether we exclude the extreme low value of *segmentation* (Portugal) or both the high and low values (New Zealand and Portugal). Other specifications and codings (e.g., simplifying to a binary form of the dependent variable, as in the figures), not shown but available, do not cause us to question the results reported above.

ISSP also asks a five-response question on whether respondents would like to see more or less government spending on *unemployment benefits*, the variable Rehm (2011) analyzed, but available only for a much smaller sample (19,768 respondents in 14 countries over 8 different years who were asked *both* questions in the *same* survey). Results remain qualitatively the same as in Table 1 for the risk variables, though naturally standard errors are larger. The effects of the current unemployment rate and one's own status as unemployed on support for spending both increase. The results for social distance are hard to interpret. Preferences for spending drop when increasing distance, but that holds equally for the poor, where we should expect no difference, and the prediction for the cross-partial $\frac{\partial(\partial r^*/\partial y)}{\partial d}$ is rejected. Since the model is about redistribution, since the results for social distance are very sensitive to particular observations, and since the smaller sample exhibits extremely high collinearity between distance and other variables, we do not read too much into these results.

Conclusion

Overall, the results support the insurance with segmented labor market model. Less segmentation, which captures the distribution of risk, increases support. If deindustrialization and the end of Fordism have divided labor forces into secure and insecure segments, support for redistribution may have been stable or even declined while overall needs may have been sharply rising. This has not come about through waning middle-class social affinity toward the poor, but through less middle-class concern with becoming poor themselves. Rising dualism of labor markets is associated with waning support for redistribution. The clear link from labor market segmentation to support for the welfare state represents an important contribution to existing research on risk and preferences, notably Rehm (2011).

All our empirical specifications support the notion that preferences for redistribution increase in the middle

classes when labor markets are less segmented. By contrast, as our analysis of observational equivalence between the insurance and affinity models implied might be the case, preferences seem to be less affected by social or economic distance between groups once labor market segmentation is taken into account. While we noted several points at which the results resembled the predictions of the affinity model, also when analyzing minority status in the (mostly) U.S. sample, the affinity estimates seem to be more affected by a combination of omitted variable bias, a lack of generalizability, and some specification dependence.

An important puzzle for future research is why segmentation has progressed further in some countries than in others. It may reflect deliberate policies to spread or concentrate risks that are themselves shaped by the structure of the political system (Iversen and Soskice 2015) or by electoral trade-offs between insider and outsider support (Lindvall and Rueda 2014). There are related policy consequences that deserve attention. In the social distance model, to increase majority support for transfers to the poor, attitudes toward minorities must be altered through education or integration. In the insurance model with segmented labor markets, the solution is instead to spread risks more widely by improving the ability of minorities to compete for good jobs—that is, by deliberate policies to reduce labor market segmentation. Tolerance is surely always desirable, but it will not solve the problem of rising inequality if the cause is not primarily prejudice but rather reflects self-interest and economic forces.

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Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher's website:

Supplementary Materials

Part 1. Definitions of variables

Part 2. ISSP data extracted from all ISSP modules between 1985-2011 and further data sources, and alternative measures

Part 3. Derivations in Section 2.4

Part 4. Linear relationship between risk and income

Part 5. Average marginal effects of skew and segmentation, conditional on income

Part 6. Separate estimates of social distance and segmentation

Part 7. Full minority model in restricted data

Part 8. Robustness of main estimates