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Income inequality and social preferences for redistribution and compensation differentials

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Abstract

In cross-sectional studies, countries with greater income inequality typically exhibit less support for government-led redistribution and greater acceptance of wage inequality (e.g., United States versus Western Europe). If individual nations evolve along this pattern, a vicious cycle could form with reduced social concern amplifying primal increases in inequality due to forces like skill-biased technical change. Exploring movements around these long-term levels, however, this study finds mixed evidence regarding the vicious cycle hypothesis. On one hand, larger compensation differentials are accepted as inequality grows. This growth in differentials is of a smaller magnitude than the actual increase in inequality, but it is nonetheless positive and substantial in size. Weighing against this, growth in inequality is met with greater support for government-led redistribution to the poor. These patterns suggest that short-run inequality shocks can be reinforced in the labor market but do not result in weaker political preferences for redistribution.

JEL Classification: D31, D33, D61, D63, D64, D72, H23, H53, I38, J31, R11.

Key Words: Inequality, Social Preferences, Social Norms, Redistribution, Welfare, Class Warfare.

1 Introduction

The substantial increase in wage and income inequality over the last three decades is a central focus of recent economic research and policy discussion. Much of the earlier literature focuses on accounting for why inequality is increasing. One line of work considers changes in the relative supply and demand for skilled workers due to shifts in educational attainment, the introduction of labor-saving production and computing technologies, and capital deepening. Others researchers consider structural changes of the labor market itself, like the decline of institutions and policies that have historically compressed the wage structure (e.g., unions, minimum wages) and the proliferation of "superstar" labor markets where top performers earn disproportionate sums to those just behind them. The potential erosion of social preferences regarding compensation inequality and redistribution is also widely discussed. For the United States, particular emphasis is placed on the explosion in executive pay and deepening within-establishment inequality.[1]

The empirical literature mostly considers these potential determinants in isolation. Yet, an important theme of recent macroeconomic models is that the interactions among the factors bear significant responsibility. Moreover, a greater potential for the entrenchment or amplification of inequality exists in this general-equilibrium setting.[2] Taking skill-biased technical change as an example, its individual effect on inequality to raise the skilled-unskilled wage differential will be checked in the long-run as firms substitute towards cheaper factors of production or as labor supplies and education investments endogenously adjust. If the bias is sufficient, however, the technical change and its concomitant increase in inequality may also prompt lasting changes in the structure of the labor market (e.g., deunionization, increased segregation of skilled workers) that entrench or magnify its solitary effect. Of course, interactions can alternatively dampen inequality shocks. Understanding these dynamics is important for identifying how economies respond to primal inequality shocks.

This potential for amplification is particularly strong for social preferences regarding income equalization. First, if changes in inequality directly influence ideology, then social preferences are a propagation channel for any shock to the income distribution, regardless of the source. Second, of all the factors discussed, social attitudes are the least governed (if at all) by market-like mechanisms that can retard excessive changes. Third, social preferences can affect many forms of institutions and policies—from firm employment structures to redistribution policies—resulting in higher amplification. The potential thus exists for the formation of a "vicious cycle"

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[1] Gordon and Dew-Becker (2008), Heathcote, Perri, and Violante (2010), and Acemoglu and Autor (2011) provide recent surveys of various inequality determinants from labor and macroeconomic perspectives. A small sample of the work includes Rosen (1981); Bok (1993); Berman, Bound, and Griliches (1994); Frank and Cook (1995); Katz and Murphy (1995); DiNardo, Fortin, and Lemieux (1996); Autor, Katz, and Krueger (1998); Lee (1999); Buchinsky and Hunt (1999); Krusell et. al. (2000); Card (2001); Card and Lemieux (2001); Acemoglu (2002); Card and DiNardo (2002); Rotemberg (2002); Clark (2003); Piketty and Saez (2003); Card, Lemieux, and Riddell (2004); Guadalupe (2007); Autor, Katz, and Kearney (2008); Lemieux (2008); Autor, Manning, and Smith (2010); and Autor and Dorn (2011).

[2] Examples include Acemoglu, Aghion, and Violante (2001), Benabou (2002), Hassler et. al. (2003), Alesina and Angeletos (2005), and Guvenen, Kuruscu, and Ozkan (2011).

where increases in disparity weaken concern for wage equality or redistribution. This weakened concern affords greater future compensation differentials, a shrinking of the welfare state, and so on that further increase inequality and again shift preferences. Alternatively, changes in social preferences can counteract inequality increases.

Support for the vicious-cycle hypothesis can be taken from the cross-sectional distributions of countries (particularly long-term OECD members) and regions of the United States. Nations with greater income inequality typically demonstrate less support for redistribution and greater acceptance of wage inequality than their more-equal counterparts. While the evolution of countries or regions along this pattern would be consistent with hypotheses of reduced social concern, this response is not guaranteed as many primal factors determining these long-term ideology positions (e.g., beliefs regarding social mobility) may be stable.[3] The empirical response of social preferences to changes in inequality has yet to be explored systematically.

This paper investigates this question by focusing on short-term movements in inequality and social attitudes around the long-term level of each country or United States region. A fixed-effect estimation strategy removes permanent differences in inequality and redistribution philosophies, as well as common time trends. The contribution of this study is to characterize how the resulting longitudinal responses resemble and differ from the cross-sectional pattern. How responses differ by income class and neighborhood racial heterogeneity is also considered.[4] A first set of international results are drawn from a panel of countries repeatedly surveyed by the International Social Survey Programme (ISSP) and the World Value Survey (WVS). Complementary results and extensions are developed through regional variation in the United States captured by the General Social Survey (GSS). To establish causality, an instrument-variable specification that exploits exogenous changes in the real federal minimum-wage rate interacted with predetermined regional characteristics is also employed.

The results of this study provide mixed evidence regarding the vicious-cycle hypothesis. On one hand, larger compensation differentials are accepted as inequality grows. This growth in wage differentials is of a smaller magnitude than the actual increase in inequality, but it is nonetheless positive and substantial in size. On the other hand, growth in inequality is met with greater concern over inequality, greater support for government-led redistribution to the poor, and greater support for more-progressive taxation. This is particularly true for inequality in the bottom half of the income distribution. While greater class conflict is perceived along income dimensions, the increases in support for redistribution among wealthy individuals are as strong

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[3]The determinants of this cross-sectional pattern have been a frequent and lively political-economy topic since at least de Tocqueville. Alesina, Glaeser, and Sacerdote (2001), Hornstein, Krusell, and Violante (2005), and Glaeser (2006) offer broad studies of why the United States has both higher inequality and a smaller welfare state than Western Europe, including appropriate references.

[4]Political-economy models differ in their predictions of how responses to inequality changes vary by income class. Piketty (1995) constructs a Rawlsian model where increases in the inequality of opportunity, holding fixed beliefs regarding the incentive costs of effort, promote greater support for redistribution independent of current income. On the other hand, the standard median-voter model (e.g., Meltzer and Richards 1981) suggests increases in inequality lead to a divergence in preferences for redistribution as gaps to the median income widen.

as those of poorer individuals.

These patterns suggest that short-run inequality shocks can be reinforced in the labor market, and that changes in compensation differentials due to changing factors of production are only modestly retarded by social preferences. By contrast, inequality growth does not result in weaker political preferences for redistribution, suggesting that the policy channel alone is unlikely to prompt a vicious cycle that amplifies primal inequality changes. These empirical patterns provide insights for how to most accurately model economic dynamics.

Before proceeding to the analysis, it is important to distinguish preferences regarding inequality from other factors that influence perceptions of distributive justice. Political economists have long considered how beliefs regarding the determinants of success affect attitudes towards redistribution. Individuals and societies who believe hard work and effort are more important for outcomes than luck or ancestry often choose systems characterized by higher inequality and lower redistribution.[5] Past mobility experiences and future expectations of social position are also significant for attitudes towards income equalization.[6] If the forces driving higher inequality also alter these underlying beliefs, then social preferences for equality may weaken. The analysis presented below controls for changes in these social-mobility beliefs to isolate the effect of inequality, and additional research needs to evaluate whether other amplification mechanisms operate through these channels.

Section 2 of this paper presents evidence using variations across countries in inequality levels and social preferences. Section 3 then considers regional variation in the United States, while Section 4 refines the United States findings through an instrumental-variable specification combining exogenous changes in the federal minimum wage with predetermined regional characteristics. The final section concludes.

2   Preferences in International Surveys

The international portion of this study focuses on how social attitudes towards redistribution respond to changes in national income inequality. Evidence is drawn from the International Social Survey Programme (ISSP) and the World Value Survey (WVS) using fixed-effects estimations that combine repeated opinion surveys with aggregate inequality metrics. The data structure and empirical approach are first described, followed by the estimation results and a discussion of the results and identification.

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[5] Alesina and Angeletos (2005) demonstrate how differences in these beliefs can create multiple equilibria among otherwise similar economies, as rational agents select taxation and redistribution policies (and their associated distortions) that fulfill their original expectations. Benabou and Tirole (2006) develop a related general-equilibrium model where different beliefs regarding how just the world is create two distinct redistribution states. Guvenen, Kuruscu, and Ozkan (2011) consider the general equilibrium of human capital investments and redistribution policies.

[6] For example, Piketty (1995); Benabou and Ok (2001); Fong (2001, 2006); and Alesina and La Ferrara (2005).

2.1 ISSP and WVS Data Structure

The ISSP conducts annual surveys in member countries (38 nations in 1999) on rotating topics ranging from religion to environmental protection. This study primarily considers questions that were included in the 1987, 1992, and 1999 Social Inequality module. Responses to three complementary questions proxy social preferences for government-led income redistribution, the first considering the responsibility of the government in the transfer of income (Government Responsibility), the second focusing on the progressive nature of taxation (Progressive Taxation), and the last focusing on the acceptability of current income differences (Inequality Acceptance). Higher responses on a five-point scale indicate greater support for government intervention, greater support for more progressive taxation, and greater concern over income differences.

Respondents are also asked their opinions on the appropriate salaries for a variety of occupations. Instructions request preferences be pre-tax and regardless of perceptions of current pay scales. From these responses, a Proposed Doctor-Unskilled Worker Wage Ratio is developed as the log ratio of the wages ascribed for a "doctor in general practice" and an "unskilled worker in a factory." A higher ratio indicates a wider wage distribution (i.e., a log ratio of zero would indicate unskilled workers and doctors should earn the same amount), while a lower ratio indicates less support for compensation differentials. Note that while it is possible that respondents interpret a proposed occupation like "unskilled worker in a factory" differently based upon the country's economic setting, most of our focus is on panel estimations that control for time-invariant differences in this regard. We also examine below perceptions of respondents regarding the actual earnings of these occupations.

Finally, two questions regarding the presence of conflicts between social groups are considered. The first, focusing on conflicts between the poor and the rich (Poor-Rich Conflict), is used to validate respondents' awareness of the inequality in their countries, while a second question regarding conflict between young and old people is considered as a falsification exercise (Young-Old Conflict). A higher score on a four-point scale indicates a greater perception of conflict.

As a complement to the ISSP, responses to a question included in the 1990, 1995, and 2000 rounds of the WVS are studied. For this question (WVS Income Equalization) respondents are asked to rate their views regarding income equalization, with a higher score on a ten-point scale expressing greater concern. Table 1 details the countries included, sample sizes, and average responses to these questions for both surveys. The unpublished Data Appendix describes in detail the wording of each question.

As a final ingredient, this study estimates changes in national income inequality using log Gini series constructed from the United Nations Development Programme's World Income Inequality Database (WIID), the Luxembourg Income Study (LIS), Deininger and Squire (1996), Gottschalk and Smeeding (2000), Atkinson and Brandolini (2001), and various national statistics agencies. With a few exceptions, these Gini estimates are estimated with national samples of disposable (after-transfers) household income and lagged one year. The Data Appendix documents

the international series constructed and the techniques employed.

2.2   Empirical Estimation Strategy

Figure 1 illustrates the main findings of the study. Panel 1A plots the average response by country to the Government Responsibility question in the 1992 ISSP survey against the log inequality level in the country. The trend line indicates that greater inequality is associated with weaker support for redistribution. Panel 1B plots the average proposed wage ratio for a doctor vs. unskilled worker. Respondents in countries with greater inequality propose a wider wage distribution, too. These cross-sectional patterns have been frequently documented, and both patterns could be taken as evidence that a vicious cycle could emerge with growth inequality prompting changes in preferences that further amplify the original increase.

The patterns evident in the cross-sections, however, do not necessarily dictate the movement of countries over time. Panels 1C and 1D consider changes in preferences and inequality from 1992 to the 1999 ISSP survey. In Panel 1C, increased inequality is associated with greater redistribution support, in contrast to Panel 1A. Societies experiencing increases in inequality become more concerned about income differences and assign an increasing responsibility to the government for transferring income. Thus, within-country shifts in policy preferences for redistribution do not mirror cross-country patterns, perhaps because other factors that affect redistribution preferences are not being influenced (e.g., belief about determinants of success or mobility). Yet, Panel 1D does show that respondents propose a wider wage distribution after increases in inequality. The within-country and across-country patterns are much more similar with respect to preferences regarding appropriate wage dispersion.

While important for framing the analysis, the visual correlations fail to control adequately for factors influencing both inequality and social attitudes for redistribution. First, common shifts in attitudes over time (e.g., a greater worldwide concern for inequality not necessarily linked to changes in the inequalities of individual countries) can affect the results. A robust analysis should also control for changes between surveys in national income and demography (e.g., an aging population). Finally, and most importantly, social-mobility experiences and beliefs regarding the sources of success are primary determinants of attitudes toward redistribution. It is important to account for changes in these experiences and perceptions to isolate the role of increasing inequality.

To characterize how inequality changes influence social preferences, the study estimates a series of regressions with individual responses to the surveys as dependent variables. For simplicity, only least-squares specifications are discussed; ordered-logit specifications that allow for non-linearities in responses yield similar results. The primary estimation equation takes the following form (person i, country c, year t):

$$RESP_{i,c,t} = \phi_c + \eta_t + \beta \ln(GINI_{c,t-1}) + \lambda N_{c,t-1} + \gamma X_{i,c,t} + \epsilon_{i,c,t,} \qquad (1)$$

where ϕ_c and η_t are vectors of country and year fixed effects, respectively. The cross-sectional effects ϕ_c control for the long-run positions of each country in terms of preferences and inequality levels, while the year effects η_t control for systematic changes between surveys in inequality growth and survey responses. These panel variables focus identification on relative changes in inequality and survey responses across countries in the sample. Regressions are weighted to form nationally representative samples and to have each country-survey carry the same significance. The results are robust to different weighting strategies. Standard errors are clustered by country.

The β coefficient is the focus of this study. Survey responses are ordered so that a positive β coefficient reflects a more-concerned position: greater concern for inequality, more support for government intervention, and so on. The exception is the Proposed Doctor-Unskilled Worker Wage Ratio, where a positive β coefficient reflects a wider proposed wage differential. Regressions employ the logarithm of the Gini coefficient so that the magnitudes of the β coefficients are less sensitive to the outcomes of countries with extremely large inequality levels. This is not a very important adjustment, and the appendix provides results with the base Gini coefficient. The same robustness applies to the U.S. estimations in the next section. The Gini estimates are preferably lagged one year.

The $N_{c,t-1}$ vector of covariates includes controls for macroeconomic conditions in each country contemporaneous with the inequality measure. A log GDP per capita covariate controls for national wealth at the time of the survey; two other covariates control for the share of economic activity in the country-year coming from industry/manufacturing and from services. These factors can influence preferences for redistribution independent of inequality, and incorporating these macroeconomic controls better isolates inequality's role. Finally, the $X_{i,c,t}$ vector of individual-level covariates includes personal demographics and responses to social-mobility questions as controls. These controls are discussed further below.

2.3   International Preferences Results

Table 2 presents the international results for the β coefficient, with each row representing a separate set of regressions for the ISSP or WVS dependent variable indicated. To conserve space, only the observation counts for the Government Responsibility regressions are listed. Observation counts for the other ISSP estimations in Panels B-F are slightly different, due to respondents not answering all questions, but similar in magnitude. The first column of results is for regressions that include only country and year fixed effects and macroeconomic covariates. Variables are transformed to have a zero mean and unit standard deviation to aid in interpretation. Thus, the 0.161 coefficient on the Gini estimate in the first regression for Government Responsibility indicates that a one standard-deviation growth in inequality is partially correlated with a growth of about 16% of one standard deviation in survey responses towards greater government-led redistribution.

This positive elasticity confirms the visual patterns in Panel 1C of Figure 1, and support for

a more-progressive tax structure is also evident in Panel B. Panel G also finds a similar call for greater income equalization in the WVS sample. These partial correlations are statistically significant and of moderate economic magnitudes. Taking the United States as a specific example, the implied increase in redistribution preferences from a standard-deviation inequality growth would close the gap to the average responses of other Anglo-Saxon countries (e.g., Canada, Australia, and Great Britain), but would fall short of the levels of continental Europe and especially transition economies. The short-run responses thus reflect modest movements around the long-term levels of the countries. Nevertheless, their positive direction suggests an inequality shock alone is insufficient to start a cycle of deteriorating support for redistribution policies.[7]

Potential omitted variable biases are a clear concern for these first two outcomes. It is possible that the inequality metric is simply correlated with unmodeled factors that are truly responsible for the higher support for government-led redistribution. The next three rows, however, provide reassurance that concern over inequality truly underlies the support for stronger government intervention. The increase in inequality is associated with greater concern for income differences in Panel C and greater awareness of social conflict between poor and rich in Panel D. As a comparison, Panel E finds inequality changes are not correlated with changes in awareness of social conflict between young and old people. These outcomes are consistent with inequality growth raising concerns about disparities and prompting greater support for government redistribution.

Panel F demonstrates, however, that respondents are more likely to propose a wider wage distribution with higher inequality. A one standard-deviation growth in inequality is associated with a 0.25 standard deviation increase in proposed wage differentials. An unreported disaggregation of changes in the Proposed Doctor-Unskilled Worker Wage Ratio finds the expansion to be primarily occurring between doctors and skilled workers rather than skilled workers and unskilled workers. A similar elasticity is evident for the proposed wage differential between the chairman of a large, national company and an unskilled worker. This growth in proposed wage differentials—based upon what respondents think occupations should earn—indicates at least partial acceptance of inequality shifts due to changes in relative factor scarcities and associated rewards. The coefficient of 0.25 is statistically different from zero, a level where no support for a wider distribution is evident, and from a value of one, a level where a full endorsement of the inequality expansion is evident if the inequality increase is due to growing earnings differentials.

The 0.25 coefficient is measured using all changes in inequality, and this approach may understate the elasticity due to earnings inequality itself. By mixing growth in inequality due to labor market differentials with growth in inequality outside of the labor market, the 0.25 coefficient may underestimate the extent to which preferences regarding compensation differential expand to accommodate increases in earnings inequality. In addition to proposing wages for oc-

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[7]Levels regressions without country fixed effects also confirm the cross-section correlations evident in Panel 1A of Figure 1. Nations with greater inequality have a significantly reduced concern for income differences, weaker support for government intervention, and lower desire for a progressive tax structure. While critical for the results, panel estimations of inequality dynamics are rarely employed (e.g., Alesina, Di Tella, and MacCulloch 2004).

cupations, the ISSP surveys ask respondents what they think occupations actually earn. Fixed effect regressions of Proposed Doctor-Unskilled Worker Wage Ratio on the perceived wage ratio for doctors and unskilled workers yield elasticities of about 0.6. That is, growth in perceived inequality is again associated with larger proposed distributions, but not as wide as the perceived increase itself. This 0.6 elasticity finding, along with the reported results using national inequality changes, leads to the conclusion that social preferences over wage differentials expand to accommodate substantial portions, but not all, of growth in earnings inequality. These patterns suggest that short-run inequality shocks can be reinforced in the labor market, and that changes in compensation differentials due to changing factors of production are only modestly retarded by social preferences.

The second column of Table 2 adds each nation's log GDP per capita to capture movements in the overall wealth of the country, as well as Demographic Controls and Mobility Controls. Demographic Controls include sex, marital status, age, education, and income dummies. Mobility Controls incorporate respondents' answers to other ISSP questions that reveal beliefs and experiences regarding social mobility. ISSP regressions include two questions asking respondents to rate the importance of being from a wealthy family or of knowing the right people for getting ahead. Respondents believing these important significantly favor more redistribution. Past mobility experiences are also modeled by respondents' ratings of the status of their jobs compared to their fathers' jobs; respondents believing their jobs are better than their fathers' are significantly less likely to support redistribution.[8]

The magnitudes and significance of the β coefficients on the Gini estimates are robust to including these Demographic and Mobility Controls. Column 3 further shows the results are robust to including Work Controls of dummies for self-employed, supervisor, unemployed, and a union member.[9] Coefficient elasticities are very similar after including these covariates. The coefficients in the WVS regressions continue to suggest a higher elasticity of about 35%. The higher share of developing countries in the WVS sample likely plays a role in these larger partial correlations. Also, the larger estimates may be the product of offering respondents ten choices rather than five, making it easier to capture shifts in attitude. The specific wording of this question may also contribute, as further discussed in the Data Appendix.

Poorer and transitional countries tend to have higher support for redistribution than their

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[8]The 1990 and 1995 WVS surveys asked respondents to rate whether hard work or luck determines success or failure. The reported WVS results are robust to focusing on these survey years and including this control.

[9]Coefficients on the Demographic and Work Controls follow the patterns found in previous cross-sectional studies (e.g., Suhrcke 2001, Alesina and La Ferrara 2005). As the quality of income data varies substantially across surveys and countries, respondents are grouped into family-income quintiles for each survey year. Support for redistribution declines with income; support also tends to be lower among male and more-educated respondents. Self-employed workers and supervisors tend to have less support for redistribution, while unemployed workers and union members are more supportive. While reasonable, the direction of these findings should be treated with caution as income variation not captured by the quintile groupings may be loading onto other demographic and work characteristics. Finally, race/minority status is not included in the demographics; later results indicate this is an important factor for the United States (e.g., Luttmer 2001, Luttmer and Singhal 2011, Fong and Luttmer 2011).

OECD counterparts with similar levels of inequality (Austen 1999, Suhrcke 2001). Moreover, they demonstrate significant changes in attitudes and inequality levels that dwarf the more-stable advanced nations. To ensure the sample composition between OECD and non-OECD countries is not driving the results, Column 4 includes Year x OECD dummies. Likewise, the fifth column incorporates Year x Transition Economy dummies. The point estimates of the β coefficients typically decline when forcing the variation to be within the subgroups, but the elasticities mostly remain economically and statistically important. Kerr (2005) extends the graphical analysis in Figure 1 to also show the variations in these subgroups.[10]

2.4   Extensions and Discussion of Identification

The sample employed in Table 2 builds off of the ISSP Social Inequality module. The Government Responsibility and Progressive Taxation questions are also included in the Role of the Government modules since 1985. A longer panel can be constructed that combines surveys from these two modules. While the panel enjoys more countries and higher-frequency variation in macroeconomic conditions, it unfortunately lacks the important Mobility Controls. The findings from this longer panel mirror those in Table 2. A second version of the Government Responsibility question is also included in the Role of the Government surveys and the ISSP Religion modules. Results from this third panel are also consistent with those presented in Table 2. The stability of the findings through shifting time intervals and countries surveyed speaks to the robustness of the measured short-run response in redistribution preferences.

A causal interpretation for these results is reasonable, although not assured. Two basic concerns are the endogenous relationship between inequality and preferences (i.e., that preferences also influence the inequality levels) and omitted-variable biases. The direction of the results suggests that the reverse-causality concern is weak. It is difficult to argue that changes in social preferences to favor more income equalization produced increases in inequality, while it is very reasonable that increased inequality led to greater support for redistribution. Employing disposable-income inequalities rather than gross-income inequalities may bias the coefficient magnitudes slightly, but will not change the direction of the findings. On a similar note, this study concludes that adjustments in preferences for compensation differentials allow inequality to become entrenched in the labor market. While these results have greater scope for reverse causality, the growing concern by respondents over income inequality and the greater support for government-led interventions suggest that the wider proposed wage differentials are primarily a reaction to the inequality changes, albeit one that sustains the inequality increase.

It may be possible, however, to argue an omitted factor prompted both the increases in inequality and the changes in social preferences. For example, an increased openness to trade may have raised inequality and also increased desire for government income stabilization out

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[10]Very similar results are obtained without the macroeconomic controls. For example, elasticities for Government Responsibility and Proposed Doctor-Unskilled Worker Wage Ratio are 0.161 (0.057) and 0.260 (0.076), respectively, when only considering inequality and country and year fixed effects.

of fear of globalization (and unrelated to the change in inequality itself). As noted earlier, the consistent results of higher inequality being associated with greater concern over income disparities suggest, however, that the most plausible interpretation is the increased inequality acted directly on social preferences. A more-rigorous instrument strategy employed with the U.S. data will also support this interpretation. Unfortunately, the U.S. survey employed in the next section does not contain wage differential questions like the ISSP. Thus, the U.S. instruments are only able to assess causality for the general redistribution result.[11]

3 Preferences in U.S. Surveys

To complement the international findings, regional variation in inequality and support for redistribution from the United States is explored next. This study is important for three reasons. First, while national inequality would be the most perceived dimension for smaller countries such as Bulgaria or Ireland, regional differences may be more important for large nations that display significant heterogeneity in economic activity. Moreover, a substantial fraction of policy and budget decisions in the United States are made at the state or city level, with officials accountable to their local constituents. Finally, but certainly not least from a research perspective, the quality and quantity of U.S. data afford extensions and instruments that are not possible in international studies.

3.1 GSS Data Structure

U.S. social preferences are estimated from the General Social Survey (GSS). The GSS has been conducted on an annual or biennial basis since 1972 with sample sizes ranging from 1400 to 3000 adults. The analysis considers four questions on the survey through 2000. The first question asks on a three-point scale whether the United States should be spending more or less money on welfare (Welfare Spending); an identical question regarding spending for the space exploration program (Space Exploration Program Spending) is also considered as a falsification exercise similar to the conflict between the young and old question in the international study. A third question (GSS Income Equalization) documents respondent support on a seven-point scale for the federal government's reduction of income differences between the rich and the poor. Responses are again ordered so that higher values correspond to higher support for the reduction of inequality.[12]

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[11]Suggestive evidence from the international panel can be taken from an approach that instruments each country's inequality trends using the inequality trend of its closest neighbor. Second-stage elasticities for Government Responsibility and Proposed Doctor-Unskilled Worker Wage Ratio are 0.234 (0.100) and 0.198 (0.125), respectively, when using the framework in Column 1 of Table 2. The instrument, however, is weak with a first-stage coefficient of 0.615 (0.336) and an F-statistic of 3.2 (standard errors clustered by country). This weakness and concerns over the exclusion restriction suggest cautious interpretation.

[12]To validate these surveys, Luttmer (2001) demonstrates that over 30% of the variation in state welfare-benefit levels can be explained through an interaction of attitudes towards welfare with state demographic compositions. He also considers how norms for redistribution modeled with the GSS mirror voting patterns in a California proposition.

The analysis also considers how changes in political-party affiliation correlate with changing inequality levels (Party Identification). Respondents are asked to state their party preference and the strength of this association on a seven-point scale, with one being strongly Republican and seven being strongly Democrat. Of course, many other factors influence party affiliation, and the platforms of parties demonstrate temporal and regional variation. Nevertheless, it is reasonable to portray the Democratic Party over the last three decades as supporting higher levels of redistribution from the United States' wealthy classes to its poorer classes than the Republican Party. Regressions with this question study whether higher inequality is associated with changes in political affiliation, in addition to changes in support for welfare programs. The Data Appendix details the wording of these four questions.

The final requirements for the U.S. analyses are the important inequality metrics. The richness of U.S. data offers additional flexibility, and two metrics of overall inequality are considered. Modeling inequality with regional log Gini estimates affords comparisons to the earlier international work. The detailed data also allow consideration of inequality trends for different parts of the income distribution. Thus, overall inequality is additionally modeled as the differential between the log 80th and 20th percentiles. After considering overall inequality, the 80-20 differential is disaggregated into the changes in inequality in the upper and lower halves of the distribution (i.e., the 80-50 and 50-20 differentials). Inequality estimates in this section are calculated over disposable family income for the four primary Census regions (i.e., Northeast, Midwest, South, and West) from the March Current Population Surveys (CPS). Robustness checks show these results are representative of other income definitions (e.g., pre-tax family labor earnings, hourly wage) and lower levels of regional aggregation (e.g., nine Census regions, states).[13]

Figure 2 plots the mean response to the GSS Welfare Spending question and the 80-20 income differential for each region by year. Two identification issues for the U.S. findings can be discerned from this graph. First, differences in regional inequality trends exist (the solid line). While the South begins with significantly higher inequality than the other regions in the early 1970s, the strong growth in inequality in the Northeast and West results in the three regions being approximately equal by the late 1990s. The Midwest, while also experiencing an increase

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[13]Three levels of geographic aggregation and three forms of inequality are considered for the United States. On the geographic dimension, inequality estimates for Census regions (four or nine) are calculated from the March CPS files. These annual measures are preferred since decade-based measurements can miss important fluctuations, most noticeably the significant expansion in family-income inequality during the recessions of the early 1980s and 1990s. The sample sizes of the March CPS are insufficient, however, for state-level analyses and states are not identified until 1977. State-level statistics are instead calculated from the Census for each decade.

Three income definitions are considered: post-tax disposable family income from all sources, pre-tax family labor earnings, and hourly wages. The first two family measures are calculated over family equivalents using Danziger and Gottschalk's (1995) procedure of dividing by an inflation-adjusted poverty-line estimate for a family of similar composition (i.e., the number and ages of adults and children in the family unit). Additional procedures for preparing the sample (e.g., the exclusion of military families, adjustment of top-codes) follow Danziger and Gottschalk (1995), Autor, Katz, and Krueger (1998), and Katz and Autor (1999).

In each analysis, the region fixed effects and median income levels are adjusted to the appropriate geographic aggregation; median income levels are additionally adjusted to reflect the income definition used in the inequality calculation. The Data Appendix reports the regional disposable-income 80-20 differential estimates employed in the primary regressions.

in inequality, remains significantly lower than the South throughout the period. Unlike the international analysis, however, none of the regions experience a period of substantial decline in inequality. Thus the inference is from stable inequality or relative increases in inequality.

Second, the dramatic swings in the mid-1970s and 1990s highlight that regional variation in welfare support can be second-order to large national shifts, likely due to political swings. The significant decline in support in the mid-1970s is linked to the explosion in welfare caseloads in the prior decade (e.g., Moffitt, Ribar, and Wilhelm 1998), while the large dip in the mid-1990s surrounds the 1994 Republican Revolution during Clinton's first term. The close co-movement of regional inequality and Welfare Spending preferences between these periods is quite striking. The national trends in inequality and social preferences are absorbed by the year effects, while systematic levels differences between regions are controlled for by geographic fixed effects. Given the importance of these national elements, the regression coefficients for the regional variation may be smaller than those captured in the international estimations.[14]

3.2   U.S. Preferences Results

Table 3A considers a set of specifications similar to the international regressions studied in Table 2; Table 3B replaces the log Gini inequality metrics with log 80-20 income differentials. Standard errors are bootstrapped for the U.S. analysis.[15] Column 1 of both specifications finds changes in regional inequality partially correlate with a statistically significant increase in support for all three preferences when only year and region fixed effects are included. As expected, the coefficients are somewhat smaller than those found in the international regressions, as the regional variation is weaker than national trends. As a falsification exercise for Welfare Spending, if anything respondents urge a decline in Space Exploration Program Spending when inequality increases, but this result is not precisely measured.

As before, Columns 2 and 3 further show the magnitudes and statistical significance of the coefficients are robust to including the regional median income (akin to the national GDP per capita) and Demographic Controls, Mobility Controls, and Work Controls. Unfortunately, incorporating many GSS social-mobility variables severely limits the sample size; the regressions only include a question that asks whether the financial position of a respondent's family has improved, worsened, or stayed the same over the last few years. The GSS does, however, collect race data. Non-white respondents are found in the fourth column to have significantly higher support for redistribution, even after including income levels and the other Demographic Controls.

The coefficients for Welfare Spending and Party Identification remain of similar size and

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[14]While representative, the mean regional responses should be treated with caution. The sampling design of the GSS results in certain states or metropolitan areas with distinct differences in social preferences from their surrounding region entering and leaving the survey (e.g., the more-religious Utah in the West). While the regression results control for these shifts, the regional mean responses do not.

[15]The ISSP and WVS have sample weights that prohibit bootstrapping. Estimations that exclude the sample weights and bootstrap confirm Table 2's findings, with the results stronger and more precisely estimated.

significance with these controls, but those for Income Equalization diminish. In general, once controlling for a basic set of covariates and perceptions of mobility levels, the U.S. analysis does not find a strong link between inequality and this support for Income Equalization. In many respects, this question amalgamates respondent's views regarding pay scales in the labor market and redistribution policy. As the international evidence found these views on these dimensions move in opposite directions, the limited overall response for Income Equalization is not too surprising. The most robust support again goes to increases in redistribution policies.

These results are robust to a variety of specification checks. Two are mentioned here, before turning to extensions. First, demographic surveys often find respondents over-estimate their relative financial position. In addition to actual incomes, the GSS collects respondents' perceptions of their incomes compared to the national average. The results are robust to using these perceptions rather than actual income levels. Second, the southern parts of the United States experience distinct economic and political adjustments during this period compared to the rest of the country. While this variation is useful, we also find similar outcomes when excluding this region.[16]

3.3 Empirical Extensions

A significant concern about the analysis thus far is that Gini estimates only measure overall inequality. A detailed exploration should further identify the subsets of the income distribution that are most important for changes in social preferences. While more-disaggregated international statistics are very rare and typically of poor quality, U.S. data are available. Table 4 decomposes the 80-20 inequality into the 80-50 and 50-20 differentials. The results suggest that trends in inequality in the lower half of the distribution (i.e., the poor being increasingly left behind) are most responsible for the aggregate results previously identified for the United States. Using 90-50 and 50-10 trends, which demonstrate less co-movement than the 80-50 and 50-20 series, yields significant results for the 50-10 ratio in all regressions (including Income Equalization).[17]

Two additional extensions reported in Kerr (2005) consider whether the average increase in support for redistribution with rising inequality masks differences among income classes. While the demographic characteristics of respondents are statistically significant for explaining survey answers, Piketty (1996a,b, 1999a) notes the overall level of disagreement within a country about distributive equality is usually small vis-à-vis other social issues (e.g., death penalty). Section 2 found, however, that perceptions of conflict between the poor and the rich increase with rising

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[16]Increases in inequality are also associated with shifts in party identification to the left in the ISSP and WVS samples. These results are not emphasized due to the lack of party comparability across countries compared to the U.S. analysis. There is also intriguing evidence of declines in political participation as inequality increases.

[17]Moffitt, Ribar, and Wilhelm (1998) find evidence that declining welfare-benefit levels can be linked to declining low-skill wages, as voters seek to maintain a target benefit-wage ratio (perhaps to preserve equity between working and non-working poor or to minimize employment disincentives). The disaggregated income inequality results—in particular, the positive and significant coefficient on the 50-20 ratio—are robust to including measures of the 15th or 25th percentile wages.

inequality, and it is important to clarify if the average response belies increasing disagreement among classes about appropriate redistribution levels. The rich may become more protective of their wealth as the gap grows, perhaps out of concern over larger transfers or perhaps out of reduced fear that they too may one day be poor. Altruistic motives, however, may yield greater assistance from the wealthy as disparity widens.

A first test for this heterogeneity interacts the inequality measures with whether respondents are in the top-two income quintiles or the bottom-two income quintiles. These estimations do not find significant differences by class for the GSS Welfare Spending or Income Equalization variables. These coefficient magnitudes are very small, and the standard errors are tightly estimated. Similar null results for income-quintile interactions are also present in the ISSP and WVS. Concern over rising inequality grows in all income groups (while the overall levels are higher in poor households). GSS respondents in the bottom-two quintiles are disproportionately more likely to align themselves with the Democratic Party as inequalities in their regions increase. This result, however, is sensitive to more structured controls like interacting a time trend with being in the upper-two or lower-two income quintiles, suggesting that other factors may be playing a role.[18]

A second test interacts the inequality measures with whether the respondent lives near someone of the opposite race. Luttmer (2001) finds support for welfare spending increases as the share of local recipients from a respondent's racial group rises. Lind (2007) also finds aggregate evidence that inequality between racial groups versus inequality within racial groups can have opposite effects for redistribution outcomes. The interacted coefficient for the Welfare Spending regression agrees with these studies—the increase in redistribution support associated with rising inequality is diminished in racially heterogeneous neighborhoods. There is no clear effect for the Income Equalization measure.

These results suggest changes in support for government-led redistribution are fairly uniform across income groups. This finding is in agreement with Rawlsian models like Piketty (1995), where different classes have similar views on distributive equality holding fixed beliefs about incentive costs. On the other hand, the standard median-voter model (e.g., Meltzer and Richard 1981) suggests increases in inequality lead to a divergence in preferences for redistribution as gaps to the median income widen. A limitation to these findings, however, is important to note. Piketty and Saez (2003) find a tremendous increase in the concentration of wealth among the very rich in the United States (i.e., the top 1% and even smaller fractions). Atkinson, Piketty, and Saez (2011) review the work that has followed regarding top income shares. Unfortunately, the data cannot be used for an analysis for these super-wealthy individuals, executive compensation committees, and similar institutions.

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[18]McCarty, Poole, and Rosenthal (2003) note increases in U.S. inequality have moved in tandem with stronger ideological differences over redistribution and more-polarized party politics. While income has become a stronger predictor of party affiliation over the last twenty-five years, their work also suggests inequality bears limited responsibility for the polarization.

4 U.S. Minimum-Wage Instrument

U.S. regional estimations agree with the earlier international results: increases in inequality partially correlate with increases in desire for government-led redistribution. In addition to finding this effect on two levels, it was earlier noted that the direction of the results, the lagging of inequality, and the significance of survey questions focused on inequality itself suggest a causal interpretation is reasonable, although still not assured. In this section, an instrument designed for the U.S. regional variation further undergirds this claim.

In recent empirical studies, labor economists note the role of the minimum wage in rising U.S. inequality, especially during the 1979-1989 period when the real (i.e., inflation-adjusted) value of the federal rate declined by 24%.[19] While these substantial swings in mandated federal rates can be taken as exogenous from the perspective of individual states or regions, they do not provide the necessary regional variation by themselves. An appropriate instrument can be designed, however, through the interaction of these national trends with predetermined regional characteristics that govern how important minimum-wage mandates are for the local economy. The year effects absorb the national dynamics of the changing federal rate, and the pre-existing regional traits are controlled for by the geographic fixed effects. The identifying assumption is that the residual region-year interactions can serve as an instrument for the region-year inequality trends (which are themselves also subject to the fixed effects).

This study employs regional coverage ratios, defined as the percent of the working population protected by the minimum-wage statutes, as the interaction terms. Regions differ in the composition of their economic activity, and the federal minimum-wage mandates are not applied equally to industries (e.g., 1970-2000 coverage rates in agriculture averaged 41% versus manufacturing's 97%). The larger the fraction of a region's population covered by the federal statutes, the more impact federal rates have on the local economy. The simplest interaction term would be the 1970 coverage rate; in a slight design improvement, the interaction term is built instead as the expected coverage in year t for each region. This modification allows incorporation of trends in national coverage rates due to changing federal legislation (especially in the mid 1970s), thereby raising the quality of the first-stage estimations. The inequality instrument for region r and year t takes the form

$$INEQ - IV_{r,t} = \ln(FED_{1970}/FED_t) \cdot E_{1970}COV_{r,t},$$

where

$$E_{1970}COV_{r,t} = 1 - \sum_j IND\%_{j,r,1970} \cdot (COV_{j,1970}/COV_{j,t}),$$

with j indexing industries. The two parts of this interaction deserve careful explanation. The construction of the second element, $E_{1970}COV_{r,t}$, is the more complicated. It is the expected

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[19]For example, Card and Krueger (1995); DiNardo, Fortin, and Lemieux (1996); Lee (1999); Golan, Perloff, and Wu (2001a,b); Card and DiNardo (2002); Autor, Manning, and Smith (2010); and Ahn, Arcidiacono, and Wessels (2011).

coverage rate in region r for year t, estimated from the 1970 industrial composition of the working poor and changes in national coverage rates by industry. $IND\%_{j,r,1970}$ is the percent of a region's workforce from the 1970 Census who are both earning less than the minimum wage and working in industry j. By itself, $\sum_j IND\%_{j,r,1970}$ would produce the actual percentage of the region's working population earning less than the federal minimum wage in 1970. $COV_{j,1970}/COV_{j,t}$ is the ratio of the national coverage rate for industry j in 1970 to that in year t. From a starting value of one, the ratio moves above one for industries where the coverage rates decrease compared to 1970 levels; it moves below one when coverage rates increase.[20]

The combination of these terms is the expected percentage of a region's workforce earning below the minimum wage in year t. The starting 1970 level of $\sum_j IND\%_{j,r,1970}\cdot(COV_{j,1970}/COV_{j,t})$ is still the actual workforce percentage earning below the 1970 federal rate in each region (as the coverage ratio for all industries is one). For subsequent years, it is expected that the percentage of the population earning below the minimum wage will decline in region r if its poor workers were primarily employed in industries where the coverage rate later increased. On the other hand, little change is expected in states or regions where very few workers were initially below the minimum wage or where the poor worked in industries for which the coverage rate did not change significantly. Finally, $1-\sum_j IND\%_{j,r,1970}\cdot(COV_{j,1970}/COV_{j,t})$ estimates the percent of the population covered by the minimum-wage mandates and thus the potential importance of changes in the federal rate for the region's inequality level.

Turning to the first term, $\ln(FED_{1970}/FED_t)$, the log ratio of the real federal minimum-wage rate in 1970 to the rate in year t takes an initial value at zero for 1970. In years when the real federal rate is greater than the real federal rate for 1970, this component of the instrument has a negative value, and vice versa. Note that some states have mandated minimum wages that exceed the federal rate. These are not considered as the local legislation could clearly be endogenous to the inequality levels. The Data Appendix provides descriptive statistics for these two components of the instrument.

The instrument is then the interaction of shifts in the real federal rate with the expected coverage level, or how much the federal legislation matters for a region. The instrument comes only from the interaction between these two elements. The individual trends of the real federal rate and industry coverage rates are absorbed by the year effects. Geographic fixed effects control for the region's predetermined industrial composition of poor workers. This latter control is important as the inequality of regions may influence industrial composition over a sufficiently long time horizon. For example, firms in certain industries may adjust location choices in response, or policy interventions to fight poverty/inequality may push workers into certain industries. The

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[20]Coverage rates are at the one-digit SIC level and exclude government employees (e.g., Nordlund 1997, United States Department of Labor 1998). Coverage rates have not been identified for 1989 or after 1996. For the main estimations, a linear interpolation is employed for 1989 and observations post-1997 are assigned 1996 values; the results are robust to dropping these missing years. Unfortunately, the coverage data are not disaggregated to where each observation's own region could be excluded. As the Data Appendix shows, the expected coverage rate calculations produce only a slight trend vis-à-vis fixed 1970 levels.

interaction approach keeps the instrument's regional component fixed at the pre-determined 1970 level to circumvent these issues, and the geographic fixed effects control for this trait.

The instrument does not have a level *per se*—its value for all regions is zero when the real federal rate is equal to its 1970 level (i.e., 1970 itself, approximately so in 1975, 1976 and 1981). It relies on the region fixed effects to control for the mean inequality positions of each area. Finally, the instrument is designed to have a positive first-stage coefficient. The $E_{1970}COV_{r,t}$ term is always positive and only governs the magnitude of the response; the $\ln(FED_{1970}/FED_t)$ component is positive when the current federal rate is below its 1970 level, which should correspond to rising inequality, and vice versa.

Figure 3 plots a graphical version of the first stage for each region. The lines for the minimum-wage instrument (the solid line) and the inequality level (the line with circles) are residuals after year and geographic fixed effects are removed. The expected first-stage relationship is apparent within each region. Estimated at the regional level and using bootstrapped standard errors, the first-stage coefficient for regional Gini inequality is 1.50 (0.40), with an F statistic of 11.7 and a partial R^2 of 0.16. The first-stage coefficient for the regional log 80-20 differential is 1.53 (0.53), with an F statistic of 7.3 and a partial R^2 of 0.10.

Tables 5A and 5B present the detailed results of the instrumental-variable specifications for the log Gini and 80-20 differentials, respectively. As inequality is lagged one year in the estimations, the instrument is lagged as well. The second-stage results confirm the least-square specifications discussed earlier; a one standard-deviation increase in inequality is now found to produce 20% of a standard-deviation shift in support for government-led redistribution and political party identification. Substantially weaker results are found on the other two variables. The instrument specifications are robust to using other forms of aggregate inequality (90-10 differentials, entropy) or focusing on the lower half of the income distribution through 50-20 differentials. The small increase in coefficient magnitude from the least squares results is likely due to the instrument focusing on inequality in the lower part of the income distribution.

Table 6 concludes by replicating the Column 2 regressions of Tables 3B and 5B (i.e., estimations including median income levels, Demographic Controls, and Mobility Controls) across three levels of geographic aggregation and three income definitions. The first three columns are for least-squares regressions, while the last three columns are for instrumental-variable specifications. The two regional specifications are annual and derived from the March CPS while the state specifications are at the decade level and derived from the Census. The least-squares permutations are well-behaved and generally indicate a moderate decline in coefficient size as specifications move away from disposable family income towards the hourly wage definition. The declining coefficient sizes with lower levels of geographic aggregation mirror the earlier coefficient reduction from the international regressions to the four Census regions variation. However, these two trends are weaker in the instrumental-variable permutations. While larger standard errors are evident in some state-level or hourly wage specifications, the instrumental-variable results

in general are robust across these dimensions. The Data Appendix describes further robustness checks made on the instrument's design.

5   Conclusions

This study characterizes how changes in inequality affect social attitudes towards government-led redistribution and compensation differentials. Market-based factors have substantially increased inequality in the United States over the last three decades. If the inequality caused by these mechanisms reduces social preferences regarding distributive equality, the inequality can become amplified and entrenched. While international and U.S. regional cross-sections often display a strong, negative correlation between inequality and support for redistribution, this study finds countries and states do not evolve along this pattern in the short-run.

Controlling for initial positions and respondent views of social mobility, local changes in inequality are positively and significantly correlated with changes in support for government-led redistribution. While greater class conflict is perceived along income dimensions, the increases in support for redistribution among wealthy individuals are as strong as those of poorer individuals. To the extent the forces driving inequality also alter the underlying beliefs (e.g., determinants of success, mobility experiences, incentive costs) most important for determining the long-term trade-off between inequality and redistribution preferences, then these forces may contribute to reduced concern over the disparity. But the results of this study suggest that a short-term increase in inequality is unlikely to prompt a vicious cycle where support for redistribution declines, thereby promoting further increase in inequality.

On the other hand, significant growth in proposed wage differentials are evident in the international analyses with higher inequality. While less than one-for-one, increases in inequality are associated with greater acceptance of wage disparities. This pattern suggests that labor market changes may reinforce inequality growth.

Several important areas for future research exist. Political economists have long studied reasons for the negative cross-sectional relationship between inequality and support for redistribution; this study explored localized movements around these long-run positions. Recent theoretical research considers endogenous shifts in long-term positions (e.g., Benabou 2002, Hassler et. al. 2003); as more data become available, future research should empirically test these longer-term dynamics. Such shifts will further clarify the primal factors behind cross-sectional differences, highlight whether the concerned responses noted here are governed by important thresholds or critical-mass points, and identify mechanisms beyond ideology that can contribute to the formation of vicious cycles.

It is also important to characterize the channels through which inequality and preferences interact. For instance, increasing social stratification[21] may amplify or diminish the direct effect of

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[21]For example, Putnam (2000); Benabou (1993, 1996); and Bertrand, Luttmer, and Mullainathan (2000).

increasing inequality on social preferences. Alesina and La Ferrara (2000) report greater inequality is particularly correlated with reduced membership in church and service groups, activities often associated with assisting the less fortunate. Watson (2009) links inequality with greater income segregation in cities. This deterioration of civic bonds may weaken support for redistribution. On the other hand, Luttmer (2001) argues free-rider concerns likely reduce support for welfare policies, and perhaps these concerns are weakened in more-segmented communities. It is also unclear how the non-pecuniary status desires that can limit support for redistribution change in a more-stratified society (e.g., Corneo and Gruner 2000, 2002). A better understanding of how stratification and other channels facilitate the interaction of inequality and preferences will afford more-causal assessments and aid in policy recommendations.

Finally, and most importantly, future research should trace out how changes in social preferences translate into policy outcomes. Existing studies examining the connection of increases in inequality to policy changes related to redistribution find mixed results.[22] The findings of this paper suggest that social preferences regarding inequality adjust to desire more redistribution while allowing greater labor market inequality. Different political systems—including such diverse issues as government structure, campaign financing laws, voter participation, etc.—will influence whether shifts in preferences produce important policy changes or not. The importance of franchising groups favoring higher redistribution and the disproportionate influence of elites are often noted in particular.[23] How political systems are structured will govern whether rising latent concerns for redistribution produce higher effective support to which politicians are held accountable.

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[22]Recent examples include Rodriguez (1999); Piketty (1999b); Caminada and Goudswaard (2001); Moene and Wallerstein (2001, 2003); Hassler et. al. (2003); Gundersen and Ziliak (2004); Chernick (2005); Schwabish, Smeeding, and Osberg (2006); Leigh (2008); Schwabish (2008); Corbae, D'Erasmo, and Kuruscu (2009); Boustan et al. (2010); Corcoran and Evans (2010); and Cooper, Lutz, and Palumbo (2011). See also Pope (2009) for trends in U.S. real well-being.

[23]For example, Husted and Kenny (1997); Lott and Kenny (1999); and Saint-Paul (2001).

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Fig. 1: Social Preferences Regarding Inequality in ISSP Surveys
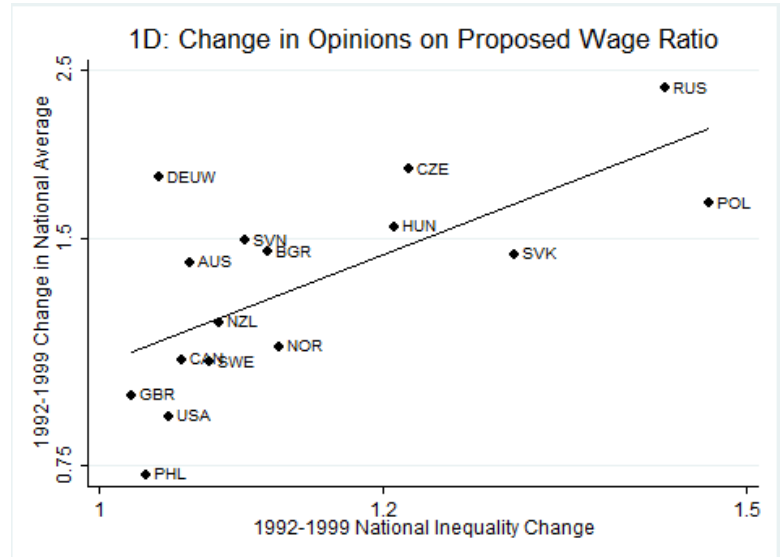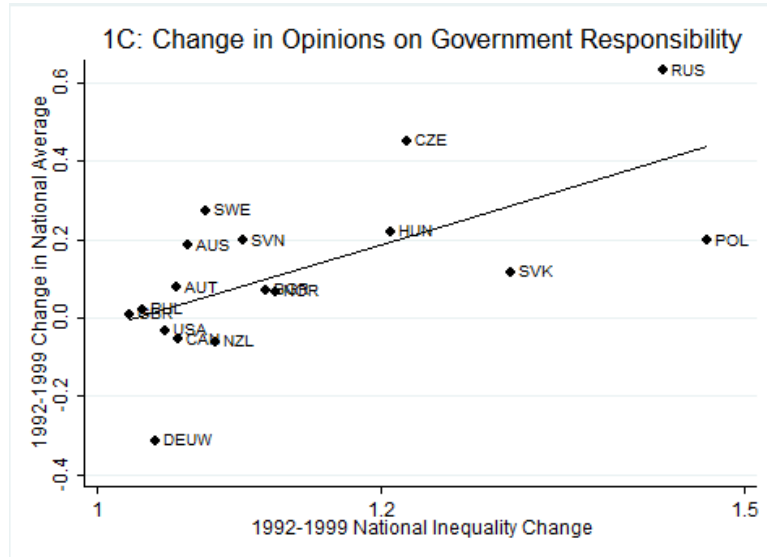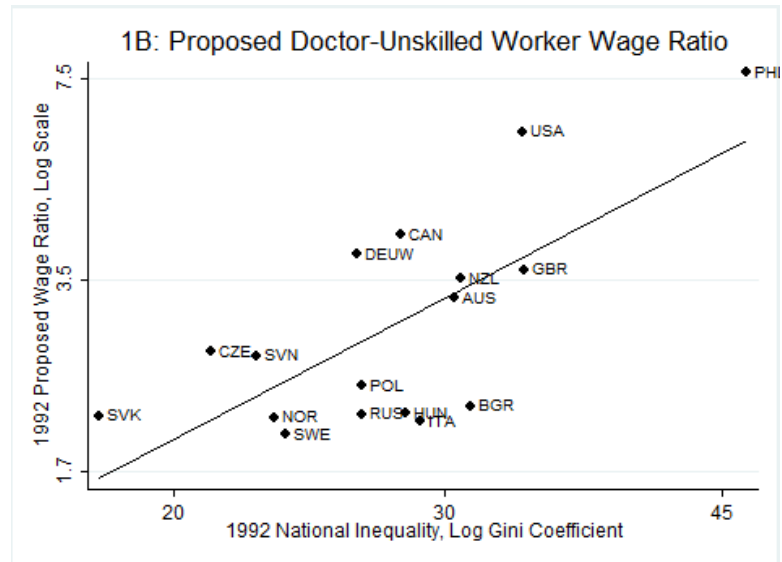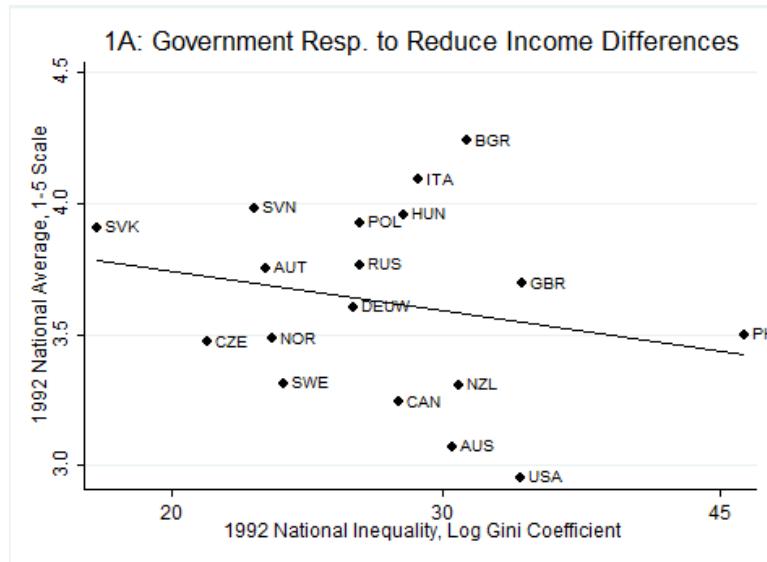
Notes: Panel 1A plots 1992 ISSP responses on the government's responsibility to reduce income differences, with higher values indicating greater responsibility. Panel 1B plots the average proposed wage ratio for a doctor vs. unskilled worker. Countries with greater inequality express lower redistribution preferences and propose a wider wage distribution. Panels 1C and 1D consider 1992-1999 changes. Increased inequality is associated with greater redistribution support and wider proposed wage ratios.

Fig. 2: U.S. Welfare Spending Preferences and Regional Inequality
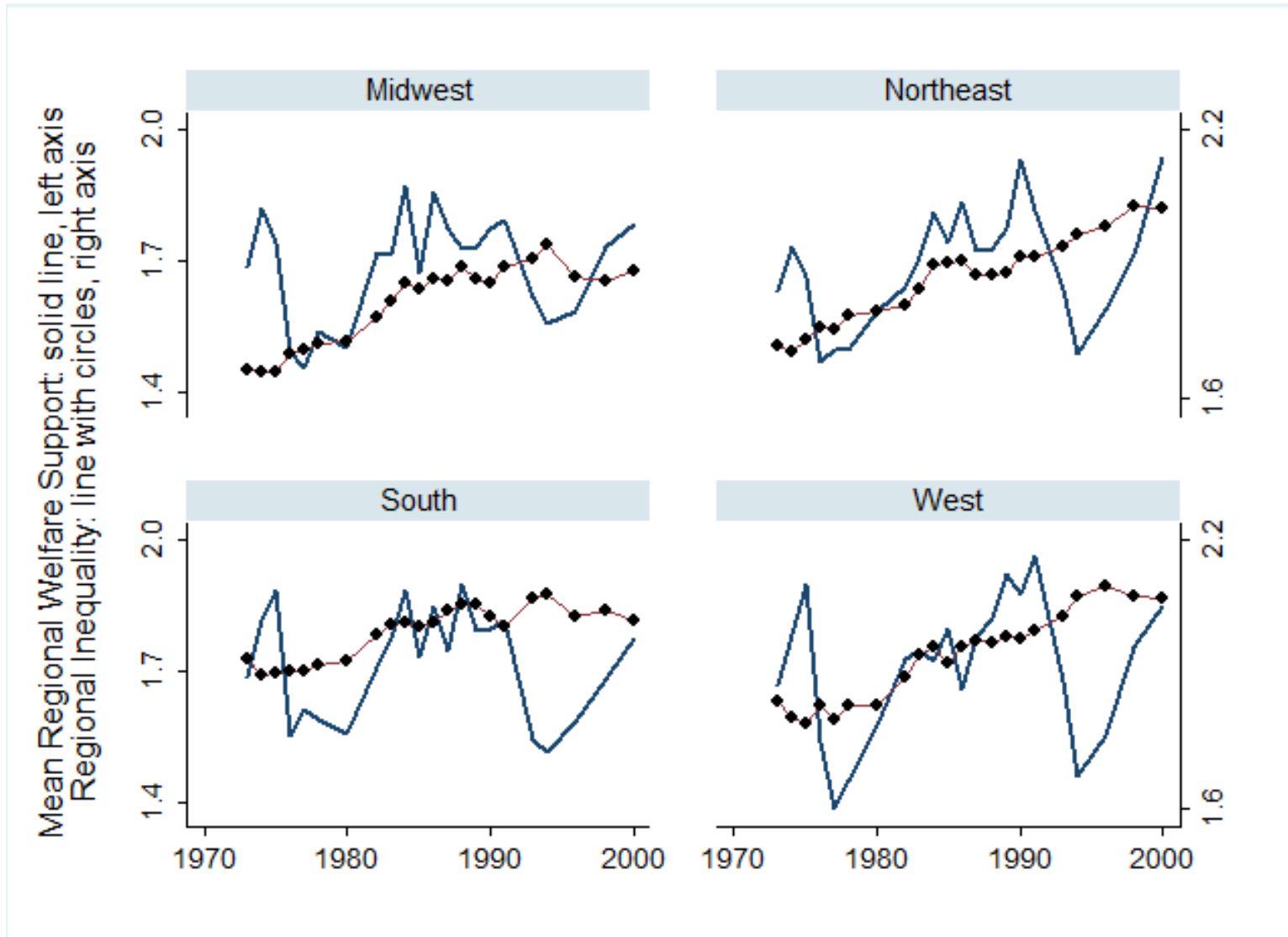
Notes: Figure plots the co-movement in U.S. regional inequality and average support for welfare spending among GSS respondents. The solid lines without circles are the average support on a three-point scale for greater welfare spending by respondents in the region, with higher values indicating greater support. The lines with circles are regional inequalities measured as the log 80-20 income differential from the March CPS.

Fig. 3: First Stage for U.S. Minimum-Wage Instrument
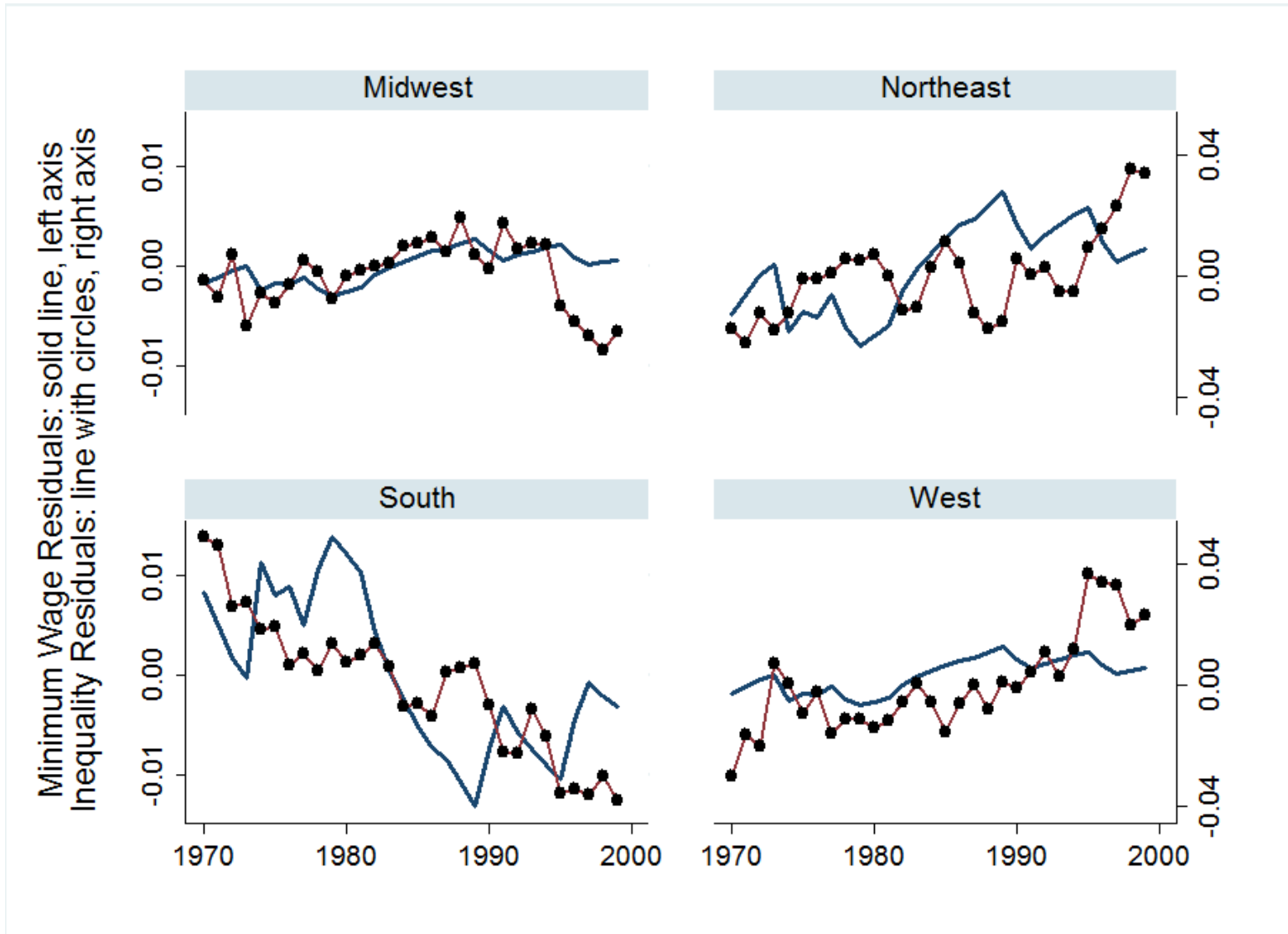
Notes: Figure plots the first-stage relationship between the U.S. minimum-wage instrument and regional inequality. The solid lines without circles are the residuals from regressing the minimum-wage instrument on region fixed effects, year fixed effects, and the region's log median income level. The lines with circles are the residuals for regional inequality similarly constructed.

Table 1: ISSP and WVS Descriptive Statistics

	Total Sample	Long-Term OECD	Non Long-Term OECD
	A. ISSP Social Inequality Panel		
Countries	19	11	8
Respondents	54,091	31,083	23,008
Government Responsibility (1-5 Scale)	3.65 (1.19)	3.41 (1.20)	3.96 (1.10)
Progressive Taxation (1-5 Scale)	4.02 (0.77)	3.97 (0.73)	4.10 (0.82)
Proposed Doctor-Unskilled Wage Ratio	3.80 (8.17)	4.16 (8.17)	3.35 (8.16)
Inequality Acceptance (1-5 Scale)	4.05 (0.99)	3.88 (0.99)	4.28 (0.95)
Poor-Rich Conflict (1-4 Scale)	2.52 (0.84)	2.45 (0.77)	2.62 (0.90)
Young-Old Conflict (1-4 Scale)	2.21 (0.80)	2.22 (0.75)	2.19 (0.86)
Log Gini Coefficient	3.37 (0.17)	3.35 (0.13)	3.40 (0.22)
	B. WVS Social Inequality Panel		
Countries	37	15	22
Respondents	137,006	51,104	85,902
WVS Income Equalization (1-10 Scale)	5.25 (3.01)	5.31 (2.73)	5.22 (3.17)
Log Gini Coefficient	3.51 (0.30)	3.35 (0.16)	3.60 (0.32)

Notes: Table provides descriptive statistics on social preferences for income inequality and government redistribution taken from the ISSP and WVS surveys. Survey responses are ordered such that higher values indicate more concerned responses, excepting the proposed doctor-unskilled wage ratio. Variable means are reported with standard deviations indicated in parentheses. Sample sizes in some regressions are smaller than total respondents as some respondents skipped questions; surveys also varied on the demographic and mobility information collected. ISSP Long-Term OECD Members include AUS, AUT, CAN, DEU, GBR, ITA, JAP, NOR, NZL, SWE, and USA. ISSP Non-Long-Term OECD Members include BGR, CZE, HUN, PHL, POL, RUS, SVK, and SVN. WVS Long-Term OECD Members include AUT, BEL, CAN, DEU, ESP, FIN, FRA, GBR, IRL, ITA, JAP, NLD, NOR, SWE, and USA. WVS Non-Long-Term OECD Members include ARG, BGR, BLR, BRA, CHL, CHN, CZE, EST, HUN, IND, KOR, LTU, LVA, MEX, NGA, POL, ROM, RUS, SVK, SVN, TUR, and ZAF.

Table 2: ISSP and WVS Regressions with Aggregate Gini Inequality

	Base Regression	Including Demographic and Mobility Controls			
		Base Regression	Including Worker Controls	Including OECD-Yr. Effects	Including Trans.-Yr. Effects
	(1)	(2)	(3)	(4)	(5)

ISSP Social Inequality Panel

A. Government Responsibility Responses

Log National Gini Coefficient	0.161 (0.048)	0.153 (0.049)	0.158 (0.051)	0.129 (0.056)	0.093 (0.058)
Observations	54,054	45,918	45,918	45,918	45,918

B. Progressive Taxation Responses

Log National Gini Coefficient	0.238 (0.071)	0.234 (0.077)	0.235 (0.076)	0.188 (0.072)	0.187 (0.090)

C. Inequality Acceptance Responses

Log National Gini Coefficient	0.160 (0.046)	0.142 (0.045)	0.148 (0.046)	0.084 (0.049)	0.072 (0.067)

D. Poor-Rich Conflict Responses

Log National Gini Coefficient	0.148 (0.039)	0.161 (0.041)	0.162 (0.039)	0.138 (0.036)	0.159 (0.042)

E. Young-Old Conflict Responses

Log National Gini Coefficient	-0.009 (0.052)	-0.008 (0.048)	-0.009 (0.048)	-0.088 (0.075)	-0.016 (0.077)

F. Log Proposed Doctor-Unskilled Wage Ratio Responses

Log National Gini Coefficient	0.256 (0.089)	0.238 (0.081)	0.239 (0.080)	0.302 (0.080)	0.241 (0.089)

WVS Panel

G. WVS Income Equalization Responses

Log National Gini Coefficient	0.358 (0.100)	0.374 (0.106)	0.371 (0.106)	0.341 (0.116)	0.266 (0.146)
Observations	137,006	118,499	118,499	118,499	118,499

Notes: Regressions consider the relationship between national inequality and preferences for redistribution and compensation differentials taken from ISSP and WVS. Survey responses are ordered such that higher values indicate more concerned responses, excepting the proposed doctor-unskilled wage ratio. Regressions include country and year fixed effects. Regressions include country-year controls for log GDP per capita, share of workers in industry, and share of workers in services. Demographic Controls include sex, marital status, age, education, and income dummies. Mobility Controls include respondents' views on the determinants of success (e.g., knowledge, family connections) and comparisons of their jobs to their fathers' jobs (ISSP). Work Controls include self-employed, unemployed, supervisor, and union-member dummies. Inequality measures are lagged one period. Variables are transformed to have zero mean and unit standard deviation. Regressions are weighted for nationally representative samples and equal cross-national weight. Standard errors clustered by country are in parentheses. Observation counts for Government Responsibility are representative for other ISSP variables.

Table 3A: GSS Regressions with Aggregate Gini Inequality

	Base Regression	Including Demographic and Mobility Controls		
		Base Regression	Including Worker Controls	Including Racial Controls
	(1)	(2)	(3)	(4)

A. Welfare Spending Responses

Log Regional	0.130	0.135	0.114	0.132
Gini Coefficient	(0.035)	(0.035)	(0.039)	(0.031)
Observations	24,247	21,965	14,704	21,965

B. Income Equalization Responses

Log Regional	0.086	0.040	0.059	0.023
Gini Coefficient	(0.043)	(0.043)	(0.043)	(0.040)
Observations	20,414	18,344	17,293	18,344

C. Political Party Identification Responses

Log Regional	0.198	0.206	0.217	0.196
Gini Coefficient	(0.024)	(0.024)	(0.033)	(0.028)
Observations	37,763	33,971	23,026	33,791

D. Space Exploration Program Spending Responses

Log Regional	-0.044	-0.047	-0.067	-0.047
Gini Coefficient	(0.031)	(0.034)	(0.032)	(0.030)
Observations	23,942	21,757	14,574	21,757

Notes: Regressions consider the relationship between regional inequality and preferences for redistribution taken from GSS. Survey responses are ordered such that higher values indicate more concerned responses. Regressions include the log median income for each region, region fixed effects, and year fixed effects. Demographic Controls include sex, marital status, age, education, and income dummies. Mobility Controls include recent changes in family financial position. Work Controls include self-employed, unemployed, and union-member dummies. Racial Controls include non-white respondent dummy. Inequality measures are lagged one period. Variables are transformed to have zero mean and unit standard deviation. Bootstrapped standard errors are in parentheses.

Table 3B: GSS Regressions with 80-20 Income Differential Inequality

	Base Regression	Including Demographic and Mobility Controls		
		Base Regression	Including Worker Controls	Including Racial Controls
	(1)	(2)	(3)	(4)
A. Welfare Spending Responses				
Log Regional 80/20 Differential	0.098 (0.030)	0.114 (0.026)	0.127 (0.036)	0.112 (0.030)
Observations	24,247	21,965	14,704	21,965
B. Income Equalization Responses				
Log Regional 80/20 Differential	0.099 (0.024)	0.040 (0.039)	0.051 (0.035)	0.026 (0.028)
Observations	20,414	18,344	17,293	18,344
C. Political Party Identification Responses				
Log Regional 80/20 Differential	0.135 (0.022)	0.164 (0.022)	0.173 (0.029)	0.158 (0.028)
Observations	37,763	33,971	23,026	33,791
D. Space Exploration Program Spending Responses				
Log Regional 80/20 Differential	0.002 (0.026)	-0.015 (0.029)	-0.021 (0.038)	-0.016 (0.032)
Observations	23,942	21,757	14,574	21,757

Notes: See Table 3A.

Table 4: GSS Regressions with Disaggregated Inequality

	Base Regression	Including Demographic and Mobility Controls		
		Base Regression	Including Worker Controls	Including Racial Controls
	(1)	(2)	(3)	(4)
A. Welfare Spending Responses				
Log Regional 80/50 Differential	0.013 (0.028)	0.013 (0.031)	0.002 (0.032)	0.001 (0.030)
Log Regional 50/20 Differential	0.072 (0.020)	0.084 (0.023)	0.098 (0.030)	0.086 (0.027)
Observations	24,247	21,965	14,704	21,965
B. Income Equalization Responses				
Log Regional 80/50 Differential	0.067 (0.032)	0.042 (0.042)	0.042 (0.037)	0.028 (0.038)
Log Regional 50/20 Differential	0.046 (0.026)	0.011 (0.030)	0.020 (0.032)	0.007 (0.029)
Observations	20,414	18,344	17,293	18,344
C. Political Party Identification Responses				
Log Regional 80/50 Differential	0.036 (0.027)	0.035 (0.026)	0.002 (0.032)	0.015 (0.024)
Log Regional 50/20 Differential	0.093 (0.014)	0.114 (0.021)	0.137 (0.020)	0.118 (0.015)
Observations	37,763	33,971	23,026	33,791
D. Space Exploration Program Spending Responses				
Log Regional 80/50 Differential	0.017 (0.036)	0.002 (0.032)	-0.008 (0.033)	0.010 (0.036)
Log Regional 50/20 Differential	-0.006 (0.019)	-0.012 (0.022)	-0.013 (0.026)	-0.016 (0.023)
Observations	23,942	21,757	14,574	21,757

Notes: See Tables 3A and 3B.

Table 5A: GSS Gini Regressions with Minimum-Wage Instrument

	Base Regression	Including Demographic and Mobility Controls		
		Base Regression	Including Worker Controls	Including Racial Controls
	(1)	(2)	(3)	(4)
A. Welfare Spending Responses				
Log Regional Gini Coefficient	0.222 (0.064)	0.225 (0.066)	0.220 (0.080)	0.218 (0.073)
Observations	24,247	21,965	14,704	21,965
B. Income Equalization Responses				
Log Regional Gini Coefficient	0.122 (0.112)	0.079 (0.089)	0.095 (0.093)	0.063 (0.124)
Observations	20,414	18,344	17,293	18,344
C. Political Party Identification Responses				
Log Regional Gini Coefficient	0.220 (0.049)	0.247 (0.061)	0.204 (0.058)	0.239 (0.054)
Observations	37,763	33,971	23,026	33,971
D. Space Exploration Program Spending Responses				
Log Regional Gini Coefficient	-0.058 (0.067)	-0.038 (0.062)	-0.036 (0.077)	-0.041 (0.070)
Observations	23,942	21,757	14,574	21,757

Notes: See Tables 3A and 3B. Estimated at the regional level and using bootstrapped standard errors, the first-stage coefficient for regional Gini inequality is 1.50 (0.40), with an F statistic of 11.7 and a partial R^2 of 0.16.

Table 5B: GSS 80-20 Regressions with Minimum-Wage Instrument

	Base Regression	Including Demographic and Mobility Controls		
		Base Regression	Including Worker Controls	Including Racial Controls
	(1)	(2)	(3)	(4)
A. Welfare Spending Responses				
Log Regional 80/20 Differential	0.204 (0.062)	0.206 (0.063)	0.207 (0.062)	0.200 (0.067)
Observations	24,247	21,965	14,704	21,965
B. Income Equalization Responses				
Log Regional 80/20 Differential	0.128 (0.090)	0.070 (0.091)	0.083 (0.109)	0.055 (0.080)
Observations	20,414	18,344	17,293	18,344
C. Political Party Identification Responses				
Log Regional 80/20 Differential	0.209 (0.050)	0.232 (0.053)	0.196 (0.060)	0.224 (0.062)
Observations	37,763	33,971	23,026	33,971
D. Space Exploration Program Spending Responses				
Log Regional 80/20 Differential	-0.054 (0.066)	-0.035 (0.065)	-0.034 (0.077)	-0.038 (0.068)
Observations	23,942	21,757	14,574	21,757

Notes: See Tables 3A and 3B. Estimated at the regional level and using bootstrapped standard errors, the first-stage coefficient for the regional log 80-20 differential is 1.53 (0.53), with an F statistic of 7.3 and a partial R^2 of 0.10.

Table 6: GSS Regressions with Extended Income Definitions and Regions

Source of Log 80/20 Inequality Metric	OLS			IV		
	Four Regions	Nine Regions	State Level	Four Regions	Nine Regions	State Level
	(1)	(2)	(3)	(4)	(5)	(6)
A. Welfare Spending Responses						
Post-Tax Family Disposable Income	0.114 (0.028)	0.061 (0.028)	0.081 (0.024)	0.206 (0.061)	0.194 (0.056)	0.151 (0.065)
Pre-Tax Family Labor Earnings	0.105 (0.034)	0.068 (0.023)	0.041 (0.022)	0.209 (0.057)	0.215 (0.056)	0.207 (0.089)
Total Population Hourly Wage	0.030 (0.020)	0.056 (0.016)	0.067 (0.018)	0.593 (0.216)	0.227 (0.069)	0.157 (0.074)
B. Income Equalization Responses						
Post-Tax Family Disposable Income	0.040 (0.032)	0.027 (0.030)	0.068 (0.035)	0.070 (0.074)	0.042 (0.082)	0.125 (0.211)
Pre-Tax Family Labor Earnings	0.032 (0.034)	0.023 (0.023)	0.020 (0.024)	0.098 (0.149)	0.049 (0.098)	0.212 (0.333)
Total Population Hourly Wage	0.054 (0.021)	0.018 (0.020)	0.053 (0.027)	0.305 (0.655)	0.047 (0.163)	0.268 (0.494)
C. Political Party Identification Responses						
Post-Tax Family Disposable Income	0.164 (0.027)	0.099 (0.021)	0.050 (0.020)	0.232 (0.056)	0.202 (0.040)	0.171 (0.044)
Pre-Tax Family Labor Earnings	0.143 (0.024)	0.100 (0.018)	0.018 (0.017)	0.250 (0.051)	0.226 (0.047)	0.218 (0.061)
Total Population Hourly Wage	0.066 (0.014)	0.038 (0.014)	0.056 (0.013)	0.636 (0.180)	0.235 (0.053)	0.202 (0.060)
D. Space Exploration Program Spending Responses						
Post-Tax Family Disposable Income	-0.015 (0.029)	-0.006 (0.023)	0.012 (0.022)	-0.035 (0.061)	-0.022 (0.044)	0.005 (0.067)
Pre-Tax Family Labor Earnings	-0.034 (0.024)	-0.055 (0.029)	-0.007 (0.020)	-0.033 (0.071)	-0.023 (0.047)	0.007 (0.073)
Total Population Hourly Wage	-0.022 (0.021)	-0.006 (0.013)	-0.012 (0.017)	-0.109 (0.211)	-0.032 (0.072)	-0.005 (0.057)

Notes: See Tables 3B and 5B. Each coefficient is the result of a separate regression with the inequality measure indicated by the row title and the sample design indicated by the column header. Regressions include Demographic and Mobility Controls, the log median income for each geographic region, geographic region fixed effects, and year fixed effects. Median income covariates and geographic panel effects mirror the inequality measure employed.

1 Data Appendix

This appendix describes the dataset construction for "Income Inequality and Social Preferences for Redistribution and Compensation Differentials".

2 International Opinion Polls (ISSP and WVS)

The international exercises employ the International Social Survey Programme (ISSP) and the World Value Survey (WVS). To maintain a consistent presentation across international and U.S. surveys, responses are ordered such that more-concerned views are associated with higher numbers.

The ISSP analysis focuses on the 1987, 1992, and 1999 Social Inequality module; the Government Responsibility and Progressive Taxation questions are also included in the 1985, 1990, and 1996 Role of the Government module. Responses to three complementary questions proxy social preferences for government-led income redistribution: the first focusing on the responsibility of the government in the transfer of income, the second considering progressive taxation, and the third considering the acceptability of current income differences:

Q. (Government Responsibility) "It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes."

1. Disagree strongly
2. Disagree
3. Neither agree nor disagree
4. Agree
5. Agree strongly

Q. (Progressive Taxation) "Do you think that people with high incomes should pay a larger share of their income in taxes than those with low incomes, the same share, or a smaller share?"

1. Much smaller share
2. Smaller
3. The same share
4. Larger
5. Much larger share

Q. (Inequality Acceptance) "Are differences in income in <Respondent's country> too large?"

1. Disagree strongly
2. Disagree

3. Neither agree nor disagree

4. Agree

5. Agree strongly

Three important characteristics of these questions should be noted. They shy away from sensitive wording (e.g., words like "welfare" carry negative connotations) and they offer respondents a range of options that include a neutral stance. The Government Responsibility and Progressive Taxation questions also do not reference a country's current policy position (e.g., "do you think the government should be doing more to reduce the differences..."). Such relative questions are more difficult to evaluate in panel exercises.

Respondents are also asked their opinions on the appropriate salaries for a variety of occupations. Instructions request preferences be pre-tax and regardless of perceptions of current pay scales. From these responses, a Proposed Doctor-Unskilled Worker Wage Ratio is developed as the log ratio of the wages suggested for a "doctor in general practice" and an "unskilled worker in a factory". A higher ratio indicates a wider wage distribution (i.e., a ratio of one would indicate unskilled workers and doctors should earn the same amount). The reported results winsorize the raw ratio using the range [0.5, 100] prior to log transformation to limit the influence of outliers in descriptive exercises like Table 1. Regression analyses are very robust to adjustments of this procedure.

Other occupations present in all three Social Inequality surveys include a skilled factory worker, a government minister, and a chairman of a large national company. When discussing compensation differentials, the text also describes the evolution of the wage premiums between these positions. Unfortunately, some surveys substitute a representative value for a salary range or top code the maximum value. These adjustments have the most potential to influence the chairman salary, which is why this study focuses more on the doctor wage rate. Several techniques—dropping various survey years, using median estimations, imposing top codes, winsorizing—demonstrate very similar outcomes to the primary panel.

Finally, two questions regarding the presence of conflicts between social groups are employed. The first focuses on conflicts between the poor and the rich to validate respondents' awareness of the inequality in their countries, while a second question regarding conflict between young and old people is considered as a falsification exercise.

Q. (Poor-Rich Conflict) "In all countries there are differences or even conflicts between different social groups. In your opinion, in <R's country> how much conflict is there between poor people and rich people?"

1. No conflicts

2. Not very strong conflicts

3. Strong conflicts

4. Very strong conflicts

Q. (Young-Old Conflict) "... between young people and older people?"
1. No conflicts
2. Not very strong conflicts
3. Strong conflicts
4. Very strong conflicts

As a complement to the ISSP, this study also considers responses to a question included in the 1990, 1995, and 2000 rounds of the WVS. This question (WVS Income Equalization) asks respondents to rate their views regarding income equalization on a ten-point scale. Ten is labeled, "Incomes should be made more equal." One is labeled, "We need larger income differences as incentives for individual effort." While the WVS panel enjoys a more-diverse group of developing economies, interpretation of this question is limited by its reference to the country's current position (i.e., *more* equal, *larger* differences) and asymmetric labeling of the two extreme values. Nevertheless, finding quantitatively and qualitatively similar results in a different sample is an important robustness check.

3   International Inequality Series

This subsection details the construction of the international Gini estimates employed in the main text. Nations participating in multiple International Social Survey Programme (ISSP) or World Values Survey (WVS) rounds are included, although the former is this study's primary interest. Table A1 documents the constructed series and outlines the data sources. Data collection relied heavily on the United Nations Development Programme's World Income Inequality Database (versions 1.0 and 2.0c), the Luxembourg Income Study (LIS), Gottschalk and Smeeding (1997, 2000), and the individual publications of national statistics agencies. The WIID1 includes the earlier work of Deininger and Squire (1996) and was the original basis for this study. WIID2 is a 2008 revision that has been used to confirm the earlier series and extend where feasible to include additional survey responses.[1]

The target Gini concept is disposable household income based upon a nationally representative sample. Although many sources, including LIS, divide by the square root of the household size, equivalency scales are not consistent across countries. Data limitations prevent consideration of gross (pre-transfers) household-income inequality. Gross metrics have the theoretical advantage of being less influenced by current and past preferences for redistribution, although one can argue disposable-income differences are what respondents are recalling when questioned.

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[1] The task here is to develop Gini series covering the years included in the two survey programs. In doing so, a longer horizon is often considered than what the surveys require for a particular country to establish more confidence in the trends developed. These series, however, do not exhaust the inequality data available; gaps in the sequences do not necessarily mean appropriate Gini estimates are not available.

In the U.S. portion of this study, the form of inequality (e.g., gross versus disposable household income, household labor earnings, hourly wage) is not critical for the results. A one-year lag in inequality is targeted for each survey round, but contemporaneous and two-year or three-year lagged measures are also accepted when necessary.

Selected series include multiple observations derived with a consistent technique and dataset. Other sources not listed in Table A1 are also used to substantiate both levels and trends of the chosen series, as well as to provide comparisons for how other income concepts are behaving during the same period. In a number of cases, two or three series are pieced together to span the time frame of this study (or as much of it as possible). In such cases, observations must share a common or adjoining year as a levels check; moreover, overlapping intervals are examined when available to ensure the series are following similar trends. Auxiliary series are also employed in these exercises for verification purposes. Finally, the Gini estimates are rescaled to match the levels of LIS estimates around 1990 if the LIS is not employed directly in the construction of the series (participating countries only).

Atkinson and Brandolini (2001) outline a number of pitfalls that can occur when piecing together series from secondary datasets. The dataset developed for this study attempts to address these concerns while still assembling a meaningful panel of countries. However, it certainly falls short of achieving "double harmonization" across countries and time, and Kerr (2005) identifies questionable series due to poor quality data, alternative income concepts, splicing concerns, and so on. The consistency of the results across the ISSP and WVS samples, dropping low-quality series, and looking at harmonized U.S. inequalities should nevertheless instill confidence that the findings of this study are not the product of irregularities in the constructed series.[2]

4   U.S. Opinion Poll (GSS)

Social preferences for the United States are estimated from the General Social Survey (GSS), which has been conducted on an annual or biennial basis since 1972 with sample sizes ranging from 1400 to 3000 adults. This study focuses on a question that has been included for the full term of the survey. The question gauges respondent attitudes towards spending more or less money on welfare, while a similar question regarding spending for the space exploration program is used for contrast:

> Q. (Welfare Spending) "Are we spending too much money, too little money, or about
> the right amount on welfare?"
>   1. Too much
>   2. About right
>   3. Too little

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[2]Macroeconomic covariates are taken from the United Nations. The sector distribution covariates employ the "Value added, national currency, constant prices, by industry groups (WB estimates) [code 29915]" series.

A third question, included in most surveys since 1978, asks respondents to rate on a seven-point scale how much the federal government should concern itself with the income differences between the rich and poor (GSS Income Equalization). Seven is labeled, "The government ought to reduce income differences between the rich and poor." One is labeled, "The government should not concern itself with reducing income differences."

For both the Welfare Spending and GSS Income Equalization questions, alternative versions are included in some years (e.g., substituting "assistance to the poor" for "welfare"). As the mean responses shift significantly with these alternative word choices, these questions are not incorporated; a visual check indicates trends for these alternative questions mirror those of the main questions. It should also be noted that the Welfare Spending question references current policies. Luttmer (2001) considers several corrections for this relative inquiry, finding his results using the base question alone are robust. This study does not attempt any such corrections.

Finally, respondents since 1972 are asked their political-party preference and the strength of this association on a seven-point scale.

> Q. (Party Identification) "Generally speaking, do you usually think of yourself as a Republican, Democrat, Independent, or what?"
> 1. Strong Republican
> 2. Not very strong Republican
> 3. Independent, close to Republican
> 4. Independent (Neither, No Response)
> 5. Independent, close to Democrat
> 6. Not very strong Democrat
> 7. Strong Democrat

5 U.S. Inequality Series

Table A2 provides the federal minimum wage ratios and expected regional coverage ratios used to construct the minimum-wage instrument employed in the U.S. analysis. The last four columns also document the log 80-20 income ratios employed in the primary estimations. The robustness of the instrument design has been verified on several dimensions. First, the results are mostly robust to simply fixing the coverage rate at its 1970 level for each region; the only trouble spot is in regressions that contain only year and region fixed effects, as the simpler interaction captures some of the median-income level trend when it is excluded. Second, the total industrial composition of the region can be substituted for the industrial composition of the poor workers. Finally, as noted above, the instrument incorporates two aggregate trends—changes in the federal rate and changes in industry coverage rates. Close observation shows the instrument can work against itself. Focusing on movements in the minimum-wage level, the instrument correctly predicts regions with higher coverage levels will be more affected by federal changes. Yet, over

a short horizon and holding the minimum wage fixed, the instrument incorrectly predicts an increase in the coverage rate will raise inequality if the real federal rate is below its 1970 level; its predicted direction is correct if the real federal rate is above its 1970 level. An alternative specification removes the competing effects by using two instruments, one interacting the dynamics of the federal rate with fixed 1970 coverage rates and the second interacting industry coverage rate trends with the 1970 industrial composition. The results are again very close to those presented in the main text.

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Table A1: Gini Coefficients

Country	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
ARG	37.0										43.1	44.1	43.6	43.8	46.3	45.8	44.8	46.7			
AUS		28.1				29.2				30.4					31.1	32.0	31.5	30.9	32.2		
AUT	21.8	21.8	21.8	22.3	22.3	22.3	22.3	22.7	22.7	22.7	22.7	23.1			28.0	27.7	26.6		24.3		
BEL						22.7			23.2				22.4					25.0			
BGR										24.3			31.1	31.9	35.6	37.2	34.8	34.6			
BLR									23.0						28.0					26.0	
BRA		55.3		56.2	55.5	56.7	55.9	57.0	58.6	59.5	58.3						58.1				
CAN	28.2	27.6	27.8	28.6	28.3	28.2	28.3	28.1	27.9	27.7	27.7	28.1	27.8	28.1	27.7	28.0	29.0	29.5	29.6		
CHE			30.9										30.7								
CHL								56.1			55.1		54.7		54.9		54.8		55.5		55.2
CHN									38.2	38.0	39.3	38.9	39.7	40.6	41.8	43.1					
CZE										20.4		21.2	21.4	25.8	26.0	28.2	25.4	25.9	25.8	25.7	27.0
DEU	25.4			25.0		26.0		25.2			26.0	26.3	26.4	27.4		27.5			27.3		
DNK								25.4					23.6			26.3		25.7			
ESP	34.5										32.4					37.1					34.6
EST													41.2	38.8	39.6	39.0	37.4	34.1			
FIN							21.3	20.7	21.2	21.3	21.2	21.0	20.7	21.8	21.6	21.8	22.6	23.6			
FRA				29.0							28.0							27.0		27.0	
GBR	25.3	25.9	25.8	26.4	26.6	27.9	28.8	30.2	32.0	32.4	33.7	33.7	34.0	33.7	33.0	33.0	33.3	33.8	34.4	34.2	
HUN		26.7	26.7					30.7		29.7			28.3	31.4	32.1	33.7	33.9	34.1			
IND				33.4				35.6	35.6		35.6	34.0	35.5		34.5	33.4	35.4	36.1		36.1	
IRL	36.0								35.2						35.3					36.4	
ISR			30.0				30.8						30.5					33.6			

Table A1: Gini Coefficients (continued)

Country	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
ITA	30.9	30.3	28.4	28.9	29.8	29.9	29.9	31.6		29.3		28.9		32.2		32.0			32.9		31.6
JAP					28.0					29.3					29.7					30.1	
KOR	34.9					31.2				30.4	29.5	28.7	28.4	28.1	28.5	28.4	29.1	28.3	31.6	32.0	31.7
LTU										26.0			37.2		34.9	34.1	35.0				
LVA											22.5	22.5	29.6	24.5	30.7	31.7	32.2				
MEX					44.8					46.7			48.5		49.6		47.7		49.4		
NGA												45.0		45.0				50.6			
NLD		23.9		23.5		24.7			25.6	25.5	25.8	26.6	27.8	27.7	27.8	28.3				28.0	
NOR	22.5						22.2	22.3	21.9	23.4	22.8	23.3	23.7	24.3	25.4	24.8	25.7	26.1			
NZL			25.9		26.0		25.3		25.8	28.0	29.9	30.7	29.9	31.8	31.0	31.8	32.2	33.1			
PHL						44.6			44.5			46.8			45.1			48.7		48.2	
POL							27.7	28.1	27.6	28.6		26.5	27.4	36.2	37.3	36.9	37.8	39.0			
ROM														22.6				35.2	35.8		
RUS										26.5	28.5	26.5	28.9	39.8	40.9	38.1	37.5	37.5	37.9	39.4	
SVK										18.1	17.8	18.0	18.6	19.7	20.8	20.0	24.8	23.4			
SVN										19.0	20.1	22.7	22.6	25.0	22.0	23.4	24.0	25.0		24.9	
SWE		19.7						21.8		22.1	22.3	23.7	22.9	23.4	26.2	23.3	24.3	26.2	25.4	26.7	
TUR										43.6						41.5					40.0
USA	31.2	31.5	32.3	32.5	32.5	33.0	33.2	33.3	33.4	33.9	33.6	33.6	34.1	35.6	35.8	35.3	34.5	35.0	35.1		
ZAF											63.0					59.0					57.8

Notes: Table documents country-year Gini observations used with ISSP and WVS estimations. The target Gini estimates are one-year lags from the survey date, although contemporaneous or two-year or three-year lags are accepted when necessary. Survey responses are dropped if they do not meet these conditions. Kerr (2005) provides greater details on these calculations.

Table A1: Gini Coefficients (continued)

Country	Sources
ARG (Argentina)	WIID1 (5 NOOK)
AUS (Australia)	Gottschalk and Smeeding (2000), LIS, Statistics Australia (2002)
AUT (Austria)	LIS, WIID1 (4), WIID2 (1)
BEL (Belgium)	LIS
BGR (Bulgaria)	WIID1 (1), World Bank
BLR (Belarus)	WIID1 (5), WIID2 (2)
BRA (Brazil)	WIID1 (1)
CAN (Canada)	Gottschalk and Smeeding (2000), LIS, Rupnik et al. (2001)
CHE (Switzerland)	LIS
CHL (Chile)	WIID1 (1), WIID2 (2)
CHN (China)	WIID1 (1)
CZE (Czech Rep.)	LIS, WIID1 (1), WIID2 (1,2)
DEU (W. Germany)	Frick and Grabka (2002), Gottschalk and Smeeding (2000), LIS, WIID1 (1)
DNK (Denmark)	Gottschalk and Smeeding (2000), LIS
ESP (Spain)	Fanjul and Renes (2002), LIS, WIID2 (1)
EST (Estonia)	WIID1 (1)
FIN (Finland)	Gottschalk and Smeeding (2000), WIID1 (1)
FRA (France)	Gottschalk and Smeeding (2000), LIS, WIID2 (2)
GBR (Great Britain)	Goodman (2001), Gottschalk and Smeeding (2000)
HUN (Hungary)	LIS, WIID1 (1)
IND (India)	WIID1 (3), WIID2 (2)
IRL (Ireland)	Gottschalk and Smeeding (2000), LIS, WIID1 (1), WIID2 (1)
ISR (Israel)	Gottschalk and Smeeding (2000), LIS
ITA (Italy)	Brandolini (1999), Gottschalk and Smeeding (2000), WIID2 (1)
JAP (Japan)	Gottschalk and Smeeding (2000), Statistics Japan (2002)
KOR (South Korea)	WIID1 (1), Statistics Korea (2002)
LTU (Lithuania)	WIID1 (4), WIID2 (2)
LVA (Latvia)	WIID1 (4)
MEX (Mexico)	LIS
NGA (Nigeria)	WIID1 (1)
NLD (Netherlands)	Gottschalk and Smeeding (2000), LIS, WIID2 (1)
NOR (Norway)	Brandolini (1999), Gottschalk and Smeeding (2000), Statistics Norway (2002), WIID1 (1)
NZL (New Zealand)	Statistics New Zealand (1999)
PHL (Philippines)	Statistics Philippines (2002)
POL (Poland)	LIS, WIID1 (1)
ROM (Romania)	WIID2 (2)
RUS (Russia)	LIS, Ovtcharova (2001)
SVK (Slovakia)	WIID1 (1)
SVN (Slovenia)	LIS, WIID1 (1,4)
SWE (Sweden)	Gottschalk and Smeeding (2000), LIS, WIID1 (1)
TUR (Turkey)	WIID2 (3)
USA (United States)	Gottschalk and Smeeding (2000), United States Census Bureau (2000)
ZAF (South Africa)	WIID1 (1), WIID2 (3)

Table A2: Minimum-Wage Instrument Descriptive Statistics

Year	Nominal M. Wage	Real M. Wage	Log Ratio to 1970	Expected Coverage Ratios				Log 80-20 Family Disposable Income			
				Northeast	Midwest	South	West	Northeast	Midwest	South	West
1970	1.60	5.03	0.00	89.9	87.1	78.4	87.2	0.500	0.487	0.638	0.527
1971	1.60	4.81	0.04	89.9	87.1	78.3	87.2	0.509	0.495	0.649	0.555
1972	1.60	4.59	0.09	89.9	87.1	78.3	87.2	0.525	0.515	0.635	0.557
1973	1.60	4.46	0.12	90.2	87.5	78.9	87.6	0.532	0.504	0.649	0.597
1974	2.00	5.25	-0.04	90.3	87.7	79.2	87.8	0.525	0.503	0.628	0.578
1975	2.10	5.01	0.00	90.4	87.8	79.3	87.9	0.540	0.503	0.632	0.572
1976	2.30	5.07	-0.01	90.5	87.9	79.6	88.0	0.554	0.523	0.633	0.592
1977	2.30	4.80	0.05	90.6	88.0	79.6	88.1	0.553	0.528	0.634	0.576
1978	2.65	5.20	-0.03	90.7	88.2	79.8	88.2	0.569	0.536	0.640	0.592
1979	2.90	5.45	-0.08	90.7	88.2	79.8	88.2	0.565	0.523	0.646	0.589
1980	3.10	5.33	-0.06	90.8	88.4	80.1	88.4	0.574	0.538	0.646	0.593
1981	3.35	5.18	-0.03	90.8	88.4	80.1	88.4	0.577	0.550	0.659	0.605
1982	3.35	4.74	0.06	90.8	88.4	80.1	88.4	0.581	0.567	0.678	0.627
1983	3.35	4.48	0.12	90.8	88.4	80.1	88.4	0.601	0.587	0.690	0.652
1984	3.35	4.30	0.16	90.8	88.4	80.1	88.4	0.630	0.608	0.692	0.662
1985	3.35	4.13	0.20	90.9	88.4	80.1	88.4	0.631	0.601	0.685	0.644
1986	3.35	4.00	0.23	90.9	88.4	80.2	88.5	0.633	0.612	0.690	0.662
1987	3.35	3.93	0.25	90.9	88.5	80.2	88.5	0.617	0.609	0.706	0.670
1988	3.35	3.80	0.28	90.9	88.5	80.3	88.5	0.618	0.626	0.713	0.667
1989	3.35	3.66	0.32	90.9	88.5	80.3	88.6	0.619	0.612	0.713	0.674
1990	3.80	3.99	0.23	90.9	88.5	80.3	88.6	0.640	0.607	0.699	0.673
1991	4.25	4.25	0.17	90.9	88.4	80.2	88.5	0.638	0.627	0.687	0.682
1992	4.25	4.10	0.20	90.9	88.4	80.1	88.5	0.650	0.628	0.697	0.698
1993	4.25	4.00	0.23	90.9	88.4	80.2	88.5	0.650	0.637	0.719	0.698
1994	4.25	3.90	0.25	90.9	88.4	80.1	88.5	0.666	0.652	0.726	0.722
1995	4.25	3.82	0.27	90.9	88.4	80.2	88.5	0.678	0.630	0.705	0.745
1996	4.75	4.17	0.19	90.9	88.4	80.2	88.5	0.675	0.616	0.698	0.733
1997	5.15	4.40	0.13	90.9	88.4	80.2	88.5	0.689	0.617	0.702	0.739
1998	5.15	4.31	0.15	90.9	88.4	80.2	88.5	0.698	0.610	0.706	0.723
1999	5.15	4.25	0.17	90.9	88.4	80.2	88.5	0.702	0.621	0.702	0.731
2000	5.15	4.16	0.19	90.9	88.4	80.2	88.5	0.696	0.623	0.693	0.721

Table A3: Table 2 with Non-Log Gini Coefficient

| | Base Regression | Including Demographic and Mobility Controls | | | |
		Base Regression	Including Worker Controls	Including OECD-Yr. Effects	Including Trans.-Yr. Effects
	(1)	(2)	(3)	(4)	(5)
ISSP Social Inequality Panel					
A. Government Responsibility Responses					
National Gini	0.162	0.156	0.159	0.128	0.085
Coefficient	(0.056)	(0.055)	(0.060)	(0.066)	(0.068)
Observations	54,054	45,918	45,918	45,918	45,918
B. Progressive Taxation Responses					
National Gini	0.261	0.264	0.264	0.214	0.214
Coefficient	(0.081)	(0.084)	(0.084)	(0.079)	(0.100)
C. Inequality Acceptance Responses					
National Gini	0.145	0.128	0.131	0.069	0.043
Coefficient	(0.050)	(0.048)	(0.049)	(0.053)	(0.076)
D. Poor-Rich Conflict Responses					
National Gini	0.138	0.155	0.155	0.140	0.153
Coefficient	(0.038)	(0.041)	(0.040)	(0.034)	(0.044)
E. Young-Old Conflict Responses					
National Gini	-0.004	-0.001	-0.002	-0.085	-0.013
Coefficient	(0.055)	(0.051)	(0.050)	(0.081)	(0.078)
F. Log Proposed Doctor-Unskilled Wage Ratio Responses					
National Gini	0.239	0.223	0.225	0.303	0.231
Coefficient	(0.106)	(0.097)	(0.095)	(0.104)	(0.110)
WVS Panel					
G. WVS Income Equalization Responses					
National Gini	0.393	0.404	0.402	0.373	0.287
Coefficient	(0.114)	(0.119)	(0.119)	(0.127)	(0.140)
Observations	137,006	118,499	118,499	118,499	118,499

Notes: See Table 2. Variables transformed to have unit standard deviation to aid interpretation.

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