Micro-mechanisms and Macro-effects: How Structural Change and Institutional Context Affect Income Inequality in Rich Democracies

Matthew C. Mahutga1 and Michaela Curran2

Abstract
In this article, the authors develop a taxonomy of the micro-mechanisms by which well-studied macro-level structural changes and institutional contexts distribute income and assess this taxonomy empirically. The authors’ taxonomy explicates five distinct micro-mechanisms that operate inside and outside of the labor market to either increase (premiums) or decrease (penalties) income shares. Their analysis of total household income among over 1 million households across 14 countries and 39 years yields four contributions. First, the findings provide “middle-range” evidence regarding the specific micro-mechanisms of each macro-process. Second, premiums are more common micro-mechanisms than penalties, consistent with the phenomenon of “upper-tail polarization” observed in the literature. Third, workplace authority is the most important micro-mechanism operating in the labor market, but the top-income premium is the most important micro-mechanism overall. Finally, the relative importance of the top-income premium is greater for structural change than institutional context, which portends demands for new forms of redistribution.

Keywords
political economy, income inequality

Scholarly interest in income inequality coincided with the widely observed rising (but varied) inequality trend that began toward the end of the twentieth century (Alderson and Nielsen 2002; Gustafsson and Johansson 1999; McCall and Percheski 2010; Neckerman and Torche 2007). Two key explanations for this trend include structural changes occurring in the macro-economy and the erosion of egalitarian institutions (Alderson and Nielsen 2002; Gustafsson and Johansson 1999; McCall and Percheski 2010; Western, Bloome, and Percheski 2008). The globalization of production, technological change (TC), and financialization are the three most frequently cited sources of structural change (Alderson and Nielsen 2002; Gustafsson and Johansson 1999; Mahutga, Roberts, and Kwon 2017). The strength of organized labor, coordinated wage-setting institutions, and the welfare state are three key institutional determinants of household income inequality that are frequently studied by the power-resource school and others in the social sciences (Alderson and Nielsen 2002; Gustafsson and Johansson 1999; McCaﬀerty, Roberts, and Kwon 2017). The strength of organized labor, coordinated wage-setting institutions, and the welfare state are three key institutional determinants of household income inequality that are frequently studied by the power-resource school and others in the social sciences (Alderson and Nielsen 2002; Gustafsson and Johansson 1999; McCaﬀerty, Roberts, and Kwon 2017). The literature theorizes multiple micro-mechanisms by which these macro-contexts might affect inequality. Some involve impacts on the returns to differentially skilled workers, including both the “immiseration” of the low skilled and the “take off” of the high skilled (e.g., Alderson and Nielsen 2002; Autor, Levy, and Murnane 2003; Katz and Autor 1999; Mahutga et al. 2017; Wallerstein 1999; Wood 1994). Others focus instead on workplace authority or the returns to particular sectors (e.g., the finance, insurance, and real estate [FIRE] sector) (Mahutga et al. 2017; Lin and Tomaskovic-Devey 2013; Tomaskovic-Devey and Lin 2011). Still others focus upon mechanisms operating outside the labor market among households at the very top of the income distribution (Kenworthy 2017; Roe, Vlachos, and Waldenstrom 2009; Volscho and Kelly 2012). However, no one has examined empirically the precise degree to which these macro-level structural changes and institutions affect the income

1University of California, Riverside, Riverside, CA, USA
2University of Iowa, Iowa City, IA, USA

Corresponding Author:
Matthew C. Mahutga, University of California, Riverside, 2148 Watkins Hall, Riverside, CA 92521, USA
Emails: mattrm@ucr.edu
distribution through these theorized micro-mechanisms or assessed the relative importance of them.

We address these gaps in the field in two distinct ways. First, we develop a taxonomy of five distinct micro-mechanisms through which three types of structural change and institutional context are thought to impact household incomes; we refer to these micro-mechanisms as income penalties and premiums (cf. Brady, Finnigan, and Huebgen 2017). Income penalties include particular labor market characteristics of household earners (low skills) that reduce income on average. Conversely, income premiums include labor market characteristics of household earners (high skills, workplace authority, FIRE-sector occupations) that increase income on average. We also consider mechanisms operating uniquely among top-income households that derive a significant share of their total income from capital income (e.g., Kenworthy 2017; Kuhn, Schularick, and Steins 2018; McCall and Percheski 2010; Rosenberg 2013). Structural change and institutional context affect the distribution of income by exacerbating or ameliorating these penalties and premiums.

Second, we examine these claims empirically by analyzing the income of over 1 million households across 14 countries and 39 years from the Luxembourg Income Study (LIS) Cross-National Data Center. Analyzing household income is important because households are the units at which economic behavior is fundamentally determined and because household composition determines “how individual earnings and other incomes are pooled (or not pooled)” in the realized economy (McCall and Percheski 2010:330). Moreover, income penalties and premiums attributable to labor market and other economic forces should correlate with those attributable to household composition, but most previous research examines these two drivers of distributional outcomes independently (Alderson, Beckfield, and Nielsen 2005; McCall and Percheski 2010; Neckerman and Torche 2007). Our empirical framework allows us to examine the impact of structural change and institutional context on the former net of the latter.

**The Micro-mechanisms of Structural Change and Institutional Context: A Taxonomy**

The social science literature is clear that structural change and institutional context matter for income inequality. Beginning in the 1990s, social scientists became interested in two distinct kinds of structural changes: the globalization of production and TC (Alderson and Nielsen 2002; Autor et al. 2003; Katz and Autor 1999; Mahutga et al. 2017). More recently, a third type of structural change has captured the attention of social scientists: financialization (Lin and Tomaskovic-Devey 2013; Roberts and Kwon 2017). Social scientists also pay a great deal of attention to the distributional effects of egalitarian institutions associated with the literature on power-resources, including the relative strength of organized labor, the degree of corporatism/wage-setting, and the generosity of the welfare state (Alderson and Nielsen 2001; Bradley et al. 2003; Huber and Stephens 2001; Korpi 1985; Lee 2005; Lee, Kim, and Shim 2011).

In much of this literature, macro-processes are theorized to increase/decrease inequality through their effects on micro-level factors related to skill, occupation, employment sector and income position. However, little research attempts to empirically assess the degree to which the distributional consequences of macro-processes can be attributed to micro-level characteristics. On one hand, many studies regress aggregate indices of inequality on aggregate measures of macro-processes without observing the theorized micro-mechanisms directly (Alderson and Nielsen 2001; Lee et al. 2011; Lin and Tomaskovic-Devey 2013; Mahutga et al. 2017; Roberts and Kwon 2017). Another tradition instead examines temporal dynamics in specific micro-processes (e.g., the premium to a college degree or occupational characteristics) without connecting the two levels of analysis explicitly (e.g., technology; Autor et al. 2003; Katz and Autor 1999). For these reasons, there remains a large degree of uncertainty about which micro-mechanisms link these macro-factors to inequality, as well as their relative importance.

We consider five distinct kinds of micro-mechanisms by which the literature has suggested structural change and institutional context should affect overall income inequality. We refer to these micro-mechanisms as income penalties and premiums: low-skill penalties and high-skill, managerial, FIRE-sector, and top-income premiums. The country-year-wise bivariate correlation between these penalties and premiums and the Gini coefficient for household income are displayed in Figure 1. These associations are consistent with the literature on the distributional effects of structural change and institutional context that evokes these penalties and premiums: smaller penalties are associated with lower inequality, whereas larger premiums are associated with higher inequality. However, it remains to be seen if the frequently studied types of macro-context are related to these penalties and premiums in theoretically consistent ways.

Before a more detailed elaboration of mechanisms, we summarize the general logic of these arguments with the hypotheses that follow from them in Table 1. The first four columns summarize two types of labor market mechanisms. First, by influencing the penalty to low skills, the premium to high skills, and/or the premium to specific sectors (e.g., FIRE), structural change and institutional context affect variance in the returns to labor market participation within the working classes. Second, by influencing the relative bargaining power of labor and management, structural change and institutional context affect the degree of inequality between management and labor. The fifth column lists premiums that are unique to top-income households. As we describe and
demonstrate empirically below, this uniqueness stems from the higher ratio of capital to total income among top-income households.

Table 1 shows that globalization of production and skill-biased TC are thought to exacerbate the penalty to low skills and the premiums to high skills, workplace authority, and top incomes. Financialization is thought to affect the premiums to FIRE-sector employment, workplace authority, and top incomes. The three egalitarian institutions are thought to affect the penalty to low skills and the premiums to high skills, managerial authority, and top incomes. In what follows, we catalogue how structural change and institutional context are theorized to drive these five distinct kinds of income penalties and premiums, giving somewhat greater

Table 1. Hypothesized Mechanisms of Structural Change and Institutional Context.

|                          | High-Skill Premium | Low-Skill Penalty | Managerial Premium | FIRE-Sector Premium | Top-Income Premium |
|--------------------------|--------------------|-------------------|--------------------|---------------------|--------------------|
| Globalization of production | +                  | –                 | +                  | NA                  | +                  |
| Technological change      | +                  | –                 | +                  | NA                  | +                  |
| Financialization          | NA                 | NA                | +                  | +                   | +                  |
| Unions                    | –                  | +                 | –                  | NA                  | –                  |
| Wage coordination         | –                  | +                 | –                  | NA                  | –                  |
| Welfare states            | –                  | +                 | –                  | NA                  | –                  |

Note: A plus sign indicates a positive effect, a minus sign indicates a negative effect, and “NA” indicates no theorized effect. Positive effects on premiums and negative effects on penalties increase these premiums and penalties. Positive effects on penalties and negative effects on premiums reduce these penalties and premiums. FIRE = finance, insurance, and real estate.
attention to how structural change and institutional context affect the top-income premium (Table 1, column 5) because this literature is newer.

**High-Skill Premiums and Low-Skill Penalties**

According to classic (i.e., Heckscher-Ohlin) trade theory, production globalization should affect the demand (and thus price) for labor segments differentially, depending on their relative supply in a focal country (Alderson and Nielsen 2002; Wood 1994). In developed countries, the rise of imported manufactured goods from the South reduces the demand for low-skilled labor and increases the demand for high-skilled labor. Holding the relative supply of low- and high-skilled labor fixed, this reduces the relative wage of low-skilled labor and increases the relative wage of high-skilled labor. Thus, we expect the globalization of production to increase the premium to high skills and the penalty to low skills (Table 1, columns 1 and 2).

Whether formulated in its earlier (e.g., Katz and Autor 1999) or more recent variants (e.g., Autor et al. 2003; see also Mahutga, Curran, and Roberts 2018), the core distributional mechanism of TC is that it is skill (or routine) biased. TC allows the automation of lower skill (or higher routine) tasks, such as simple assembly or secretarial activities (see Autor et al. 2003; Katz and Autor 1999). TC should reduce the demand for low-skilled workers by automating low-skill occupations and tasks. Holding the supply of low-skilled workers fixed, this would increase the ratio of low-skill job seekers to low-skill jobs and thereby increase the income penalty of low skills. Simultaneously, TC increases the relative demand for highly skilled labor. Holding the supply of high-skilled workers fixed, a growing share of high-skill jobs would reduce competition for high-skill occupations and thereby increase the wage premium to high-skilled workers. Moreover, TC is thought to assist higher skilled labor and thus increase its marginal productivity via better technology, which further boosts their relative labor income. Thus, we expect that TC increases the premium to high skills and the penalty to low skills (Table 1, columns 1 and 2).

Most egalitarian institutions are thought to reduce income inequality between low- and high-skilled workers. Unions promote a strong egalitarian ethos among organized workers and raise wages for both unionized and nonunionized workers (e.g., Alderson and Nielsen 2002; Western and Rosenfeld 2011). Countries with strong labor movements tend to have strong left parties in government and thus stronger tendencies toward redistribution (e.g., Huber and Stephens 2001; Møller, Alderson, and Nielsen 2009; Western 1997). Wage coordination, or the extramarket sociopolitical processes whereby wage rates are negotiated by labor, is also thought to limit skill penalties and premiums within the working class (Alderson and Nielsen 2002; Bradley et al. 2003; Pontusson, Rueda, and Way 2002; Traxler 1999; Wallerstein 1999). The primary mechanism is that it “decouples” changes in the variance of labor demand across skill gradients from changes in realized wages. That is, wages that are set through institutional negotiations cannot respond instantaneously to changes in demand for particular segments of labor. Moreover, some research suggests that wage coordination improves the position of low-skilled workers, in particular (Wallerstein 1999). Thus, we expect unionization and wage coordination to reduce the premium to high skills and the penalty to low skills (Table 1, columns 1 and 2).

Welfare states should also matter for the skill dynamics outlined above (Bradley et al. 2003; Kenworthy and Pontusson 2005). Strong welfare states should boost the disposable incomes of households with low-skilled earners. Eligibility requirements underlying transfer payments are progressive (to varying degrees); they target the posttax and transfer incomes of low-skilled (and thus low-wage) workers. Conversely, high-skilled workers do not experience many of the economic risks that those with low skills experience do and receive fewer transfer payments (particularly means-tested transfers and unemployment insurance). Thus, we expect welfare states to reduce the premium to high skills and the penalty to low skills (Table 1, columns 1 and 2).

**Managerial Premiums**

Through offshoring, the production globalization expands the size of the labor market, which reduces the bargaining power of labor vis-à-vis management (Freeman 2007; Mahutga et al. 2017). It is also thought to increase the demand for talented managers capable of identifying capable suppliers and managing the far-flung contracting relations in the global South (Dencker 2009; Streeck 1987). TC’s impact on managerial premiums is less clear. On one hand, it is theorized to increase both the range of responsibilities of (and thus demand for) managers, as well as the technical skills required to carry these responsibilities out (Acemoglu 2002; Autor et al. 2003). On the other, it might also automate a range of functions previously carried out by management, leading to a shrinking size of the managerial class but higher premium for the residual group. On balance, we expect the globalization of production and TC to increase the managerial premium (Table 1, column 3).

**Financialization** refers to the growing share of economic output from finance-related activity. Some of this stems from the growth of the financial (and related) sector (e.g., Krippner 2012). Financialization is theorized to increase the bargaining power of management among nonfinancial firms that develop finance-related divisions (Lin and Tomaskovic-Devey 2013). Financialization decouples surplus and production and enhances the perceived relative status of finance vis-à-vis production. In tandem, these boost the bargaining power of management “in compensation-setting and surplus distribution processes” (Lin and Tomaskovic-Devey 2013:1294). Thus, we expect the financialization to work increase the managerial premium (Table 1, column 3).
Egalitarian institutions are theorized to reduce managerial premiums. Unions erode managerial prerogatives (to varying degrees) directly in contract language, which increases labor’s bargaining power (Stepan-Norris and Zeitlin 2002). Thus, collectively bargained contracts secure a greater relative share of output for workers vis-à-vis management. Strong wage-coordinating institutions shift the locus of control over remuneration from firms to labor and foster collective identity among differentiated workers. This represents an institutional source of bargaining power that weakens the power of management to set remuneration schedules in their favor (Wallerstein 1999). Finally, welfare states should reduce the managerial premiums through the same mechanisms as it reduces premiums to skill (e.g., redistribution away from managers). Thus, we expect all three of the egalitarian institutions studied here to reduce the managerial premium (Table 1, column 3).

FIRE-Sector Premiums

Scholars link financialization to the end of the postwar golden age of rapid growth circa the 1970s, to deregulation that increased the scope of finance-related activities along with consumer debt, and to a parallel cultural shift in corporate governance that prioritized short-term stock valuations over longer term corporate strategy (see Fligstein and Shin 2007; Krippner 2012; Tomaskovic-Devey and Lin 2011). Combined, these processes increase the rate of return to finance and related industries (insurance and real estate) relative to others (Lin and Tomaskovic-Devey 2013) and thereby increase the income of FIRE-sector employees relative to those in other sectors. Thus, we expect financialization to increase the FIRE-sector premium (Table 1, column 3).

Top-Income Premiums

To the extent that top-income households include workers with high skills, managerial positions, or FIRE-sector occupations, the labor market mechanisms discussed earlier extend rather readily. However, many note that a significant share of income among top-income households comes from business and investment income rather than labor income (Kenworthy 2017; Kuhn et al. 2018; McCall and Percheski 2010; Rosenberg 2013). Indeed, our LIS data suggests that the capital share (interest and dividends plus rent plus capital gains) of total income among households in the top 1 percent of their respective national income distributions is about 201 percent (95 percent confidence interval = 117 percent to 322 percent) greater than that of households in the bottom 99 percent, on average. As such, some of the distributional mechanisms affecting top incomes are unique. Most generally, we argue that structural change increases top-income premiums by (1) facilitating a disproportionate increase in business and investment income and (2) nonmarket channels that decrease the regulatory and fiscal burden of top incomes vis-à-vis the

Globalization of Production. Historically, the globalization of production replaces (higher wage) labor in the global North with (lower wage) labor in the global South (Kollmeyer 2009; Mahutga et al. 2017). Holding consumer prices fixed, greater profitability for offshoring firms is a rather mechanical consequence. Owners of capital in top-income households are in a key position to capture this increased profitability of offshoring firms through rising share prices, either in the form of stock option packages for executives or through larger investment portfolios. More recent theory also suggests that the globalization of production reduces the marginal tax rate of top-income households and increases the marginal tax rate of the middle classes (Egger, Nigal, and Strecker 2019; Piketty and Saez 2013). Here, corporations and the superrich are both sensitive to high marginal tax rates and have the mobility to avoid them. Consequently, governments rely on less mobile tax bases, including sales taxes and income taxes among relatively immobile workers outside of top-income households. One recent estimate suggests that the top 1 percent of income earners in the average [Organisation for Economic Co-operation and Development] country faced a globalization-induced reduction in their relative labor income tax burden of 0.59–1.45 percentage points, whereas the tax burden increased by 0.03–0.05 percentage points for the median earner. (Egger et al. 2019:355)

Thus, we expect the globalization of production to increase the top-income premium (Table 1, column 5).

Technological Change. Skill-biased TC and automation, in particular, substitutes human labor for machine labor. It also increases the productivity of the remaining labor. Both outcomes reduce the overall costs of production and thereby increase profitability among firms that engage in TC. Their greater relative share of capital income allows top-income households to capture a larger share of this increased profitability than the rest. Moreover, recent literature suggests that TC alters the way that some markets function, particularly those in sectors with intensive technological innovation. Building on Joseph Schumpeter’s creative destruction, these scholars argue that high-tech sectors are more concentrated and produce more economic rent than others. The existence of large firms in these sectors leads to more pay for top executives, while the competitive pressure to innovate in these sectors further increases executive compensation sector wide as firms compete for “talented” executives (McCall and
of this, which publishes the “incomes of the CEOs of the 50
largest Swedish firms” (p. 235). Thus, unions and wage coordi-
nation should reduce the top-income premium. Thus, we
expect the both unions and wage coordination to reduce the
top-income premium (Table 1, column 5).

Welfare States. Welfare states should reduce the top-income
premium through both market and nonmarket channels. The
most straightforward nonmarket channel is the redistributive
one outlined above. Although in theory many welfare bene-
fits (e.g., unemployment and pensions) are proportional to
what beneficiaries pay over their lifetimes, the probability of
receiving other benefits is lower among top-income house-
holds. Such households experience smaller relative eco-

Financialization. The link from financialization to a growing
share of income among top income earners has already been
well described in the sociological literature. On one hand,
investments in finance-related activities come at the expense
of investments in production (Krippner 2005; Lin and
Tomaskovic-Devey 2013; Tomaskovic-Devey and Lin
2011). This, combined with the higher profitability of
finance-related activities, rewards executives and sharehold-
ers. The extramarket story has also been told. Lin and Tomas-
kovic-Devey (2013) suggested that the ascendancy of finance
increased the rhetorical power that shareholders and execu-
tives bring to bear in their claims on firm-level resources.
That is, apart from the market forces associated with disinvest-
ment in production and hyperinvestment in finance, financial-
zation gave shareholders and executives, as the chief
architects of financialization, a greater ability to extract
economic rents from financializing firms. Thus, we expect
financialization to increase the top-income premium (Table
1, column 5).

Unions and Wage Coordination. Just as with the globalization
of production, TC and financialization boost (in theory) the
bargaining power (and thus incomes) of top executives and
shareholders at the expense of workers, and unions and wage
coordination should, in theory, have the opposite effect
(Huber, Huo, and Stephens 2019; Volscho and Kelly 2012).
The most obvious channel is the greater control of workers
over the remuneration process, which increases their share
of income vis-à-vis shareholders and executives in top-income
households. Similarly, others have argued that unions oper-
ate as both an “implicit regulation” and “organizational con-
straint” that limits executive compensation either by explicit
or implicit pressure campaigns, or by undermining the need
for close managerial supervision (Huber et al. 2019). But
other research suggests that high rates of unionization also
boost the incomes of nonunion members (Western and
Rosenfeld 2011). That is, by securing greater control of the
remuneration process among unionized firms, unions also
increase the labor share of revenue among nonunionized
firms. Wage coordination is a clear example of how this
works, where the wage increases of nonrepresented workers
get pegged to those of represented workers laboring under
bargained contracts. Moreover, unions in wage-coordinating
countries with centralized bargaining also possess more
organizational capacity to engage in coordinated implicit
regulation. Huber et al. (2019) identify an annual report by
the Swedish Trade Union Confederation as a clear example
of this, which publishes the “incomes of the CEOs of the 50

Empirical Framework

The theoretical task of quantifying the effects of structural
change and institutional context on income inequality is dif-
ficult. Disposable (e.g., post-tax and transfer) income is a
fundamentally household-level resource (Gottschalk and
Smeeding 1997). Economically, larger families enjoy
greater economies of scale (i.e., lower per capita reproduc-
tion costs) than smaller families. Sociologically, employ-
ment and spending decisions are made through a dense
overlay of social expectations and obligations arising from
the family (Gerstel and Clawson 2014; McCall and Percheski
2010).

For example, the rise of single-headed households and
female labor force participation create income gaps between
single- and dual-earner families (Burtless 1999; Daly and
Valletta 2006; Jantti 1997; Lu, Morissette, and Schirle 2011;
Peichl, Schaefer, and Scheicher 2010). Female single-headed
households may experience additional penalties associated with gender sorting and discrimination in the labor market (Cohen and Huffman 2003; Ridgeway 2011). Mothers may experience additional penalties because of slower human capital accumulation over the life course (Becker 1985; Kahn, Garcia-Manglano, and Bianchi 2014) and forms of explicit and implicit bias unique to mothers (Budig and England 2001). Because household composition is a distinct concept from the kinds of labor and capital market processes discussed above, most previous research considered these factors in isolation by examining either the determinants of (or inequality in) earnings, wages, and salaries or household income. As three influential authors recognize,

it is already a difficult task to estimate the relative importance of factors affecting the distribution of earnings . . . it is even harder to assess the relative impact on overall inequality of mechanisms that may affect—largely independently—the distribution of earnings, on the one hand, and the distributions of income of households or families, on the other. (Alderson et al. 2005:410)

Critically, income penalties and premiums to household composition may be driven in part by the penalties and premiums discussed above. For example, penalties to single-earner, single-female, and single-mother households should be correlated with penalties attributable to low skills because divorce is more prevalent, and marriage is less prevalent among individuals with lower socioeconomic status (Lundberg, Pollak, and Stearns 2016). Similarly, positive assortative mating concentrates individuals with high socioeconomic status in dual-earner households (Cancian and Reed 1999; Schwartz 2010), which makes it difficult to disentangle income premiums attributable to dual-earner households from those attributable to processes discussed above. Thus, we advance an empirical strategy that incorporates both household composition and these penalties and premiums in a single framework.

In this framework, households are the unit of analysis, and disposable household income is the dependent variable. Following the voluminous literature using studies of earnings to examine the mechanisms of income inequality (see, e.g., the literature using the “Mincer equation” to study education and earnings inequality; Grossbard 2006), we begin by regressing household income on covariates capturing the composition of the household and the penalties and premiums described above, which give us baseline penalties and premiums that are unconditional to macro-context. The resulting coefficients have a mechanical association to aggregate measures of income inequality if the underlying penalty or premium matters for inequality.

To see why this is the case, we can write income inequality as the sum of a “between” and “within” group component (Western et al. 2008):

$$\sum_{j=1}^{n} \pi_{j} f_{j} r_{j}^2 + \sum_{j=1}^{n} \pi_{j} \sigma_{j}^2$$

where $\pi$ is the proportion of the population of group $j$ in time $t$, $r$ is the deviation of the average income of group $j$ from the grand mean, and $\sigma$ is the standard deviation of income among individuals in group $j$. We rewrite the income portion of the between-group component as a function of $r$ using the generalized expression underlying all measures of inequality (Firebaugh 2003):

$$\sum_{i=1}^{n} f(r_i),$$

where $r_i$ is $x_i / \bar{x}$ and $f$ is the dispersion function of choice (e.g., Gini coefficient, Theil index, variance, Atkins measure of income inequality, and so on). Allowing $i$ to index groups defined by occupation or human capital, for example, it is clear that occupation/human capital category $i$ contributes to income inequality so long as $r_i \neq 1$. In our baseline regressions, the occupational, human capital, and top-income coefficients (penalties and premiums) we estimate can be interpreted in exactly this way (also see Figure 1).

We then interact these baseline penalties and premiums with the process of structural change and type of process theorized to affect them (see Table 1). Significant interactions occur if and only if the focal macro-factor exacerbates/ameliorates a given penalty or premium. If a given baseline ratio is positive (premium) and the interaction term with a macro-process is also positive, then the macro-process increases inequality by increasing the income share of an already advantaged income group (and vice versa). Conversely, if a given baseline ratio is negative (penalty) and the interaction term with a macro-process is positive, then the macro-process decreases inequality by increasing the income share of an already disadvantaged income group (and vice versa). That is, our analysis speaks explicitly to both $r$ and $\sigma$, in so far as our interaction terms capture inequality within penalty and premium groups across levels of structural change and types of institutional context.

**Data/Methods**

**Sample**

Our data come from the LIS Cross-National Data Center in Luxembourg, which is the most comprehensive source of cross-nationally representative and harmonized micro-data in the world. Our sample consists of the entire population of LIS country-years for which occupational and macro-level data are available. In fact, our sample is larger than that reported directly by the LIS because we include additional country-years for which country-specific occupational

---

1For example, the (log) income premium enjoyed by households with college educated earners is equal to the conditional income ratio $\log(x_i / x_{ij})$ of college graduates ($i$) to non–college graduates ($j$), which can be written as $\log(\bar{x}_i / \bar{x}_{ij}) / \bar{x}_j / \bar{x}$). Thus, departures from 0 occur if $r$, or $r_j \neq 1$. 

---
Table 2. Countries and Years Included.

| Country        | Years                          |
|----------------|-------------------------------|
| Austria        | 2004, 2007, 2010, 2013         |
| Belgium        | 1995, 2000                     |
| Denmark        | 1987, 1992, 2004, 2007, 2010, 2013 |
| Finland        | 1987, 1991, 1995, 2000, 2004, 2007, 2010, 2013 |
| France         | 1984, 1989, 2005, 2010         |
| Germany        | 1984, 1989, 1994, 2000, 2004, 2007, 2010, 2013 |
| Greece         | 2004, 2007, 2010, 2013         |
| Ireland        | 1994, 1995, 1996, 2000, 2004, 2007, 2010, 2013 |
| Luxembourg     | 1997, 2000, 2004, 2007, 2010, 2013 |
| The Netherlands | 1990, 1999, 2004, 2007, 2010, 2013 |
| Spain          | 1990, 1995, 2000, 2004, 2007, 2010, 2013 |
| Switzerland    | 2007, 2010, 2013               |
| United Kingdom | 1999, 2004, 2007, 2010, 2013   |
| United States  | 1974, 1979, 1986, 1991, 1994, 1997, 2000, 2004, 2007, 2010, 2013 |

schemes were recently converted into International Standard Classification of Occupations 88 (LIS 2018). In total, we analyze 1,084,009 to 1,003,078 households in 74 to 81 country-years among 13 or 14 countries from 1974 to 2013.

Household Income

Our dependent variable is disposable household income, which is the posttax and transfer income from all sources contributed by all income-earning members of the household. We normalize for household size by dividing household income by the square root of household size (e.g., Brady et al. 2017). Household income will also vary across countries and over time because of differences in market exchange rates, prices, and inflation. To account for this, we converted all household incomes into 2011 international dollars. We also logged these incomes for skew.

Household-Level Variables

Skill, Workplace Authority, and FIRE-Sector Earners. We coded households according to the occupation and skill of household head and partner earners. We identified head and partner earners that were high skill, low skill, managers, and FIRE-sector workers. Following the extensive literatures measuring high skills with educational credentials (Katz and Autor 1999; Wood 1994) and low skills with occupational characteristics (Autor et al. 2003; Goos, Manning, and Salomons 2014), we measure the former with college education and the latter (as well as managerial status) with standardized and harmonized occupational classifications available in the LIS. FIRE-sector occupations are coded with standardized and harmonized industrial classifications available in the LIS. The detailed LIS variables, coding procedures, and excluded categories appear in Table 3.

Top Incomes. We define top-income households as those with posttax and transfer income at or above the top 1 percent of the national-year income distribution as reported by the LIS. This 1 percent threshold is almost certainly lower than the actual 1 percent threshold for a variety of reasons, which makes our estimates somewhat conservative. See Table 3 for a more detailed discussion.

Household Composition. Consistent with our explication of the distributional effects of household composition, we created three categories of households. Dual-earner households have earning heads and partners. Single-female households are headed by women without children. Single-mother households are headed by women with children. The detailed LIS variables, effective excluded categories, and coding procedures used appear in Table 3.

Baseline Household Controls. Household income will also vary systematically by the age of household earners and according to random shocks not captured by our household composition and labor market covariates. Thus, we measure household earner age and include a squared term because incomes generally increase from young to middle age and then decrease again as household earners enter retirement. We also measure unemployed households as those in which neither the head nor partner are employed. This variable captures unobservable processes not captured by the education, skill, or occupational status of household members. Finally, there are a multitude of various household compositions untheorized here. Some households may contain earning children, other relatives, or multiple families. Such household formations are beyond of the scope of the present article, and we control for them with other household income (OHI), which is equal to the personal incomes of household members that are neither head earners nor their partners. The detailed LIS variables and coding procedures used appear in Table 3.

Structural Change and Institutional Context. With one exception, we measure structural change and institutional context in the same way that the literature measures these so that our results are as comparable with this literature as possible. Where possible, we also consider alternative operationalizations of structural change observed in the literature.
| Variable | Concept | Excluded Category | Measurement and Source |
|----------|---------|-------------------|------------------------|
| **Household earners** | | | |
| High-skilled earner | Equals 1 if household earner (head and partner) completed tertiary education, otherwise 0. | Less than a tertiary education. | LIS trichotomous education variable (educ). This is a harmonization of national education systems using the ISCED. ISCED levels 0–2 correspond to less than a secondary education. ISCED levels 3 and 4 correspond to a secondary education. ISCED categories 5 and 6 correspond to a tertiary education. |
| Low-skilled earner | Equals 1 if earner’s (head and partner) occupation is “labourers/elementary occupations,” otherwise 0. | Other skilled workers and professionals. | LIS trichotomous occupational variable (occa1) category 1. Categories 2 (ISCO-88 3–8 and 10; other skilled workers) and 3 (ISCO-88 1 and 2; managers and professionals) would be the excluded category, except that we control for managerial occupations.a |
| Managerial earner | Equals 1 where the (head and partner) earner’s occupation is a manager, otherwise 0. | Other skilled workers and professionals. | LIS variable occb1 category 1. This category corresponds to ISCO-88 category 1, which includes corporate managers and general managers. Our inclusion of low-skilled and managerial earners renders other skilled workers and professionals the excluded category. |
| FIRE-sector earner | Equals 1 if earner (head and partner) occupation is in financial intermediation or real estate, renting, and business activities and otherwise 0. | All other industries. | LIS harmonized indb1, which is a harmonization of national industrial classifications into nine industries representative of the ISIC revision 3.1. Financial intermediation is indb1 category 6, and real estate, renting, and business activities are indb category 7. These correspond to ISIC categories J and K. |
| **Top incomes** | | | |
| Equals 1 if household is in the top 1 percent of national income distribution, otherwise 0. | All other households. | We identified the 1 percent income thresholds in each country-year and flagged households with income at or above these thresholds. Although the LIS is the world-standard source for harmonized micro-data, income surveys are notoriously incomplete with respect to very top incomes because (1) such households are less likely to appear with random sampling, (2) very wealthy individuals underreport their incomes, and (3) top-coding schemes that vary between and within countries. |
| **Household composition** | | | |
| Dual-earner household | Equals 1 if married or cohabitating partners are both employed, otherwise 0. | Single-earner households. | LIS variables pi (personal income) and relation (relationship to household head). Dual-earning households equal 1 if they have a member with relation of 2200 or less and pi > 0 but < than maximum pi of household.6 |
| Single-mother household | Equals 1 if household head is a single mother, otherwise 0. | Male-headed households with and without children.5 | LIS variables sex and hhtype. Sex = 2 (female) and hhtype = any of the one parent household types. |
| Single-female household | Equals 1 if the household head is a single woman without children, otherwise 0. | Male-headed households with and without children. | LIS variables sex and hhtype. Sex = 2 (female) and hhtype = 100 (one person household). |

(continued)
### Table 3. (continued)

| Variable                        | Concept                                                                 | Excluded Category | Measurement and Source |
|---------------------------------|-------------------------------------------------------------------------|-------------------|------------------------|
| **Baseline household controls** |                                                                         |                   |                        |
| Earner age                      | In single-earner households, age of head. In dual-earner households, average age of head and partner. Also enters as a squared term. | NA                | LIS variables age among household heads and partners. |
| Unemployed household            | Equals 1 if head (single earner) or head and partner (dual earner) are unemployed. | Employed households. | LIS variable emp. In single-earner households, this equals 1 if the head is unemployed. In dual-earner households, this equals 1 if both the head and partner are unemployed. |
| Other household income          | Sum of labor income from earners who are neither household heads or partners. | NA                | Sum of personal income of household members who are neither head nor partners. |
| **Structural change**           |                                                                         |                   |                        |
| Globalization of production     | Penetration of manufacturing imports from poorer countries.             | NA                | Ratio of manufacturing imports from non-OECD and non-COMECON countries to total imports. See Mahutga et al. (2017) on why this is preferable to Southern imports over GDP. These data come from the United Nations Statistics Division (2016). |
| TC                              | Advance of automation technology.                                      | NA                | We measure TC by dividing ICT value added in by GDP in current prices. We draw this measure from Michaels, Natraj, and Van Reenen (2011), who argued that much of TC emanates directly from the ICT industry and find that this ICT value added measure polarizes the labor market on the basis of skill and job tasks. These data come from the OECD's Structural Analysis Database (OECD 2016b). |
| Financialization                | The size of the FIRE sector.                                            | NA                | We follow Lee et al. (2011) and many others by measuring financialization with the percentage of the labor force in the FIRE sectors. These data come from the OECD's Structural Analysis Database (OECD 2016b). |
| **Institutional context**       |                                                                         |                   |                        |
| Unionization                    | Share of labor force that is unionized.                                 | NA                | We measure unionization with the conventional measure union density, which we collect from Visser (2015) and supplemented it with additional data from the OECD (2016a). The density refers to the ratio of wage and salary earners that are union members divided by the total number of wage and salary earners. |
| Wage coordination               | The extramarket institutional capacity to set and coordinate wage rates across the economy. | NA                | We measure wage coordination with the most widely used Kenworthy (2001) measure as updated by Brady, Huber, and Stephens (2014). Scores ranged from 1 to 5, with 1 indicating fragmented bargaining at the plant level and 5 indicating centralized bargaining among large union and business confederations or government-imposed wage schedules. |

(continued)
Additional details and discussion of these variables can be found in Table 3. The exception is the globalization of production, which we measure with the ratio of Southern manufacturing imports to total imports (rather than gross domestic product [GDP]) following Mahutga et al. (2017), who show that the latter is a biased measure of southern import penetration because southern imports systematically boost GDP. We measure TC with the ratio of value added in information and communication technology to GDP (Michaels et al. 2014). To our knowledge, Michaels et al. (2014) are the only scholars who attempt to systematically measure TC directly (rather than via its purported effects) in a cross-nationally and temporally comparable way. Following the bulk of the cross-national sociological literature on financialization, we measure financialization with the employment share of the FIRE sector (Lee et al. 2011; Mahutga et al. 2017). We also assess the degree to which our results are robust to another common measure in cross-national research, the ratio of value added from the FIRE sector to GDP (Roberts and Kwon 2017).

Following the power resource tradition, we measure union density with the percentage of the labor force that is unionized (OECD 2016a; Visser 2015). Second, we employ the most widely used measure of wage coordination with Kenworthy’s (2001) coordination index (Brady et al. 2014). Finally, we measure the welfare state with the updated version of the frequently used industry standard generosity index (Scruggs et al. 2014).

### Regression Models

Our full empirical models are depicted in equation 3:

\[
Y_{it} = a + \beta x_{it} + \beta \delta_{it} + \beta y_{1it} + \beta y_{1,1it} \delta_{it} + \beta y_{2it} + \beta y_{1it} \delta_{it} + \beta y_{2it} \delta_{j} + \beta \tau_{t} + \epsilon_{it}
\]

In equation 3, \(i\) indexes households, \(j\) indexes countries and \(t\) indexes time. \(Y\) is household income. \(x\) is an \(n\)-by-\(k\) matrix of household compositional covariates that vary across households, countries, and time. \(y\) is an \(n\)-by-\(k\) matrix of the penalties and premiums discussed above that vary across households, countries, and time. \(\delta\) is a \(j\)-by-\(t\) matrix of socioeconomic processes and institutional configurations that vary across countries and time. \(\beta y_{1it}\) and \(\beta y_{1,1it}\) are the head, partner, or household penalties and premiums, respectively. \(\delta\) is a \(j\)-by-\(t\) matrix of socioeconomic processes and institutional configurations that vary across countries and time. \(\beta y_{2it}\) and \(\beta y_{2it} \delta_{j}\) are the moderating effects of macro-context on these penalties and premiums. \(\epsilon_{it}\) is the \(i\)-by-\(j\)-by-\(t\) matrix of remaining unexplained variation.
baseline controls discussed above. We estimate these models using ordinary least squares, but \( z (N - 1 \text{ country dummies}) \) and \( \tau (T - 1 \text{ time dummies}) \) yield two-way fixed-effects models; they eliminate unobserved processes that are both country specific but time invariant and time specific but country invariant. Thus, any significant interaction terms are driven by associations between within country variation in structural change/institutional context and household-level premiums and penalties. We adjust our coefficients and standard errors with the LIS\(^{1}\) selection probability weights. Because we observe heterogeneous households nested in countries that we observe multiple times, we also employ variance/covariance matrices that are robust to heteroskedasticity and arbitrary serial correlation within countries (Rogers 1994). Because of the directional nature of our hypothesis in Table 1 and the conservatism of our testing procedures (see following discussion), we conduct one-tailed tests.

Given the hypotheses depicted in Table 1, our key null hypothesis tests relate to \( \beta \gamma_{1,ijt} \) and \( \beta \gamma_{2,ijt} \). We estimate the cross-level interactions between macro-context and micro-penalties and micro-premiums separately for two reasons. The first and primary reason is substantive: Our goal is not to adjudicate the degree to which any one process of structural change or type of egalitarian institutions is more important than another. Rather, our goal is to evaluate the efficacy of the micro-mechanisms discussed above by comparing them across processes of structural change and types of egalitarian institutions. A micro-mechanism that is involved in many macro-processes or has large effects in a few processes is more important than one involved in few and/or with small effects. Second, with 74 to 81 country-years, we lack sufficient degrees of freedom (\( df \)) at the country-year level to estimate simultaneously cross-level interactions between all six macro-contextual factors and the household-level penalties and premiums they are theorized to affect.\(^4\)

Results

Table 4 reports our baseline penalties and premiums. Coefficients on dummy-coded covariates represent the conditional mean difference in logged household income between households in the focal and excluded categories (see Table 3 for excluded categories). These are thus easy to interpret as percentage differences. For example, unemployed households experience a (model 1) income penalty of about 28.2 percent vis-à-vis employed households, on average.\(^5\) The covariates on household age and its square captures the logged percentage increase in household income per unit increase in each covariate. Thus, household incomes increase by 4.47 percent per year in age, on average, and decrease 0.2 percent per unit increase in age squared. The apex of this parabola—the age at which incomes begin to decline with age—is roughly 64. Finally, the covariate on (logged) OHI is an elasticity; its coefficient reflects the percentage change in household income per one percent increase in OHI. On average, household incomes increase by 0.7 percent for every 1 percent increase in OHI.

The top three rows of model 1 report the income penalties for single-female and single-mother households, as well as the premium to dual-earner households. The inclusion of all three renders households with single male heads (with and without children) the excluded category. On average, single-mother households experience a roughly 25.2 percent income penalty relative to single male–headed households. Dual-earner households experience an income premium of about 29.1 percent relative to single male–headed households. Single female–headed households without children do not experience a significant income penalty vis-à-vis single male–headed households, perhaps reflecting the positive association between socio-economic status, delayed marriage and childbirth and labor force participation among women (also see Correll, Benard, and Paik 2007).

Model 2 includes the entire set of covariates capturing the labor market status of household earners. Consistent with our claim that the income penalties and premiums to household composition are correlated with those from the labor market status of household earners, the estimated penalties and premiums to the former change considerably when controlling for the latter. The income penalty to households with single mother heads drops to 20.2 percent, while the dual-earner premium drops to 18.3 percent. Thus, as much as 20 percent of the single-mother penalty and 37 percent of the dual income premium estimated in model 1 can be attributed to the labor market status of single mothers and dual household earners, respectively. These penalties and premiums change little when we control for top-income households in model 3; the dual-earning premium increases by 1 percentage point.

Figure 2 depicts the baseline income premiums and penalties from models 2 and 3 in percentage terms. According to model 2, households headed by high-education workers enjoy an income premium of about 34 percent relative to

\[^4\] Our large number of level 1 observations (households) does not affect our degrees of freedom at level 2 (country-years) (West, Welch, and Galecki 2006). Our fixed country and time effects eat up 32 \( df \), leaving 42 to 49 to work with. As can be seen in Table 1, each macro-contextual factor is hypothesized to interact with three to four penalties and premiums. Because we consider the labor market characteristics of head earners and their employed partners, this would reduce our degrees of freedom just above or just below zero (40 cross-level interactions and six country-level covariates). Combining these together in a single model would also require us to estimate a large number of “tacit” interactions up to and including a six-way interaction between the six macro-factors (Braumoeller 2004). Not only would this push our \( df \) far below zero, it would also produce coefficients that were almost impossible to interpret.

\[^5\] Using the base 10 logarithm, these percentages are equal to \((10^b – 1) \times 100\), where \( b \) is the reported coefficient.
Table 4. Regression of HH Income on HH Composition and Labor-Market Processes.

|                                | (1)        | (2)        | (3)        |
|--------------------------------|------------|------------|------------|
| **Top incomes**                |            |            | .646*** (.022) |
| The 1 percent                  |            |            |            |
| **HH composition**             |            |            |            |
| Single female head             | .007 (.08) | -.005 (.08) | .000 (.07) |
| Single mother head             | -.126*** (.010) | -.098*** (.006) | -.099*** (.007) |
| Dual-earner HH                 | .111*** (.008) | .073*** (.007) | .076*** (.007) |
| **Head labor market**          |            |            |            |
| High-education head            | .136*** (.011) | .127*** (.010) |
| Low-skilled head               | -.102*** (.005) | -.101*** (.005) |
| Manager head                   | .085*** (.002) | .076*** (.003) |
| FIRE-sector worker head        | .054*** (.003) | .046*** (.003) |
| **Partner labor market**       |            |            |            |
| High-education partner         | .071*** (.002) | .063*** (.002) |
| Low-skilled partner            | -.058*** (.004) | -.056*** (.004) |
| Manager partner                | .064*** (.005) | .058*** (.006) |
| FIRE-sector partner            | .055*** (.003) | .051*** (.003) |
| **Baseline**                   |            |            |            |
| Unemployed HH                  | -.089* (.036) | -.155*** (.032) | -.146*** (.031) |
| HH age                         | .016*** (.002) | .012*** (.001) | .012*** (.001) |
| HH age squared                 | -.000*** (.000) | -.000*** (.000) | -.000*** (.000) |
| Other HH earner income         | .012*** (.001) | .014*** (.001) | .014*** (.001) |
| Constant                       | 3.971*** (.040) | 4.013*** (.026) | 4.017*** (.026) |
| **n**                          | 1,084,009 | 1,084,009 | 1,084,009 |
| **R²**                         | .188       | .310       | .362       |

Note: Unstandardized coefficients are presented, with heteroskedastic and serial correlation–consistent standard errors in parentheses. Unknown education, period, and country fixed effects are not shown. HH = household. ***p < .001 (one-tailed tests).

those headed by medium and low-education earners. Households headed by low-skilled workers experience an income penalty of about 21 percent relative to those headed by medium- and high-skilled workers. Households headed by managers experience an income premium of about 19 percent relative to those headed by nonmanagers, and those headed by FIRE-sector workers experience an income premium of about 14 percent relative to those headed by workers in other sectors. The income penalty for households with low-skilled earning partners is about 13 percent relative to medium- and high-skilled earning partners. The income premiums to households with earning partners who are highly educated, managers, and FIRE-sector workers are 18 percent, 16 percent, and 13 percent, respectively.

Consistent with our argument that mechanisms operating outside the labor market play an important role in boosting the share of income among top-income households, most of the labor market covariates change little when the top-income premium is controlled. However, there are five premiums that change by two percentage points or more. The premiums to high education and workplace authority decrease by 3 and 2 percentage points for heads and partners, respectively. The premium to FIRE-sector heads decreases by 2 percentage points. These changes are consistent with literature on top-income households, which suggests that they tend to include earners with high education, managerial, and FIRE-sector occupations (e.g., Kenworthy 2017; Kuhn et al. 2018; McCall and Percheski 2010; Rosenberg 2013). Nevertheless, these changes are rather small. Thus, although some of the income captured by top-income households is attributable to their status in the labor market, a significant share must also reflect their disproportionate share of nonwage and nonsalary income (also see our capital income share analysis discussed on page 5). That is, the top-income covariate captures a multiplicity of mechanisms outside the labor market that benefit top-income households.

The penalties and premiums in the bottom pane of Figure 2 represent our baseline. In Table 5, we examine how structural change and institutional context change these premiums. To proceed, we report interaction terms between the type of structural change or institutional context and the penalties and premiums they are theorized to influence in the literature described above and summarized in Table 1. These interaction terms represent the slope of the focal macro-contextual factor on the focal micro-level penalty or premium. The base effects appear in Table A1 in the Appendix.

In the labor market, the globalization of production boosts the income premium to households with high-education and
managerial heads and partners, and exacerbates the income penalty to those with low-skilled heads (model 1). TC increases the income premium to households with highly educated and managerial head earners, as well as managerial partner earnings (model 2). Surprisingly, much of the distributional effect of financialization owes to the greater bargaining power it transmits to managers rather than boosts to FIRE-sector worker incomes, per se. Financialization increases the income premium to households with managerial heads and partners but has no significant effect on the premium to households with FIRE-sector workers (model 3). With respect to top incomes, all three processes of structural change increase the top-income premium and thus the share of income among top-income households (second row of models 1–3).

In the labor market, union density reduces the income premium to high education (heads and partners) and managerial status (partner), as well as the income penalty to low skills (heads) (model 4). Wage coordination reduces the income premium to households with highly educated heads and managerial heads and partners (model 5). Welfare state generosity reduces the premium to households with highly educated and managerial heads and partners, as well as the penalty to those with low-skilled heads (model 6). Finally, egalitarian institutions significantly reduce the top-income premium and thereby the share of income among top-income households (second row of Models 4–6).

Relative Importance of Micro-mechanisms

The relative importance of these micro-mechanisms is difficult to discern from the interaction terms alone, in part because the macro-processes vary widely in their distribution. Thus, Figures 3 and 4 report, respectively, the maximum impact of macro-context on the five penalties and premiums under examination (in percentage terms) and the share of the theorized micro-mechanisms that are significantly different from zero. Focusing on the absolute values of these maximum effects in the labor market in Figure 3, the change in high-education premium sums to 108 percent and varies from 27.6 percent (TC) to 6.9 percent (globalization of production) across the macro-level factors. The change in the low-skill penalty sums to 27 percent and varies from 14.5

---

The maximum impact is given by the exponentiated difference between the coefficient on the focal penalty or premium at the maximum and minimum observed level of structural change and institutional context.
### Table 5. Regression of HH Income on HH Composition, Skill, Workplace Authority, the 1 Percent, and Interactions with Macro-context.

|                           | (1)                   | (2)                   | (3)                   | (4)                   | (5)                   | (6)                   |
|---------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
|                           | Southern Imports      | Technological Change  | Financialization      | Union Density         | Wage Coordination     | Welfare State Generosity |
| MACRO                     | 0.308 (.404)          | -0.014* (.008)        | -0.005 (.003)         | -0.002 (.003)         | 0.013 (.009)          | -0.001 (.004)          |
| Top Incomes × MACRO       | 1.177*** (.177)       | 0.030*** (.007)       | 0.022* (.007)         | -0.005* (.003)†       | -0.039*** (.005)      | -0.006* (.002)         |
| Labor market × MACRO      |                       |                       |                       |                       |                       |                       |
| High-education head × MACRO | 0.286** (.070)       | 0.008* (.003)         | -0.002** (.000)       | -0.016*** (.003)      | -0.003** (.001)       |                       |
| Low-skilled head × MACRO  | -0.144*** (.039)      | -0.002 (.001)         | 0.001* (.000)         | 0.005 (.003)          | 0.001* (.001)         |                       |
| Manager head × MACRO      | 0.140*** (.031)       | 0.004* (.002)         | 0.003*** .003*** (.001) | -0.000 (.000)         | -0.009* (.004)†       | -0.001* (.001)†       |
| FIRE head × MACRO         |                       |                       |                       |                       |                       |                       |
| High-education partner × MACRO | 0.155* (.058)       | 0.002 (.003)         | -0.001* (.000)        | -0.003 (.004)         | -0.000 (.000)         |                       |
| Low-skilled partner × MACRO | 0.029 (.078)         | -0.001 (.002)        | -0.000 (.000)         | 0.001 (.004)          | 0.001 (.001)          |                       |
| Manager partner × MACRO   | 0.215* (.065)         | 0.005* (.003)†       | 0.003* (.001)         | -0.001** (.000)       | -0.015** (.003)       | -0.003*** (.000)       |
| FIRE partner × MACRO      |                       |                       |                       |                       |                       |                       |
| Constant                  | 4.010*** (.034)       | 4.101*** (.056)       | 4.079*** (.039)       | 4.055*** (.062)       | 3.996*** (.028)       | 4.040*** (.102)       |
| n                         | 1,084,009             | 1,003,078             | 1,028,451             | 1,084,009             | 1,084,009             | 1,068,235             |
| $R^2$                     | 0.364                 | 0.363                 | 0.361                 | 0.363                 | 0.364                 | 0.363                 |

Note: Unstandardized coefficients are presented, with heteroskedastic and serial correlation-consistent standard errors in parentheses. Unknown education, period, and country fixed effects not shown. Base effects appear in Table A1. Manager partner × technological change, $t = 1.99$; 1 percent × union density, $t = -1.77$; manager head × wage coordination, $t = -2.03$; manager head × wage coordination, $t = -1.85$. HH = household; MACRO = macro-context.

*p < .05, **p < .01, and ***p < .001 (one-tailed tests); †p < .10 (two-tailed tests).
percent (unionization) to 5.8 percent (globalization of production) across macro-factors. The change in the managerial premium sums to 130.7 percent and varies from 17.2 percent (TC) to 5.8 (welfare state) percent across macro-factors. Turning to the top-income premium, we see change in this mechanism sums to 491.9 percent and varies from 167 percent (TC) to 25 percent (welfare state) across macro-factors. Thus, these comparisons suggest that the managerial premium is the most important micro-mechanism in the labor market, but the top-income premium is the most important micro-mechanism overall.

Turning to Figure 4, we arrive at the same conclusion. Structural change (75 percent) and institutional context (66.7 percent) together moderate 70 percent of the possible high-education premiums. They moderate 25 percent (structural change) and 33.3 percent (institutional context) of the low-skill penalties, or 30 percent overall. Conversely, 91.7 percent of the managerial premiums are moderated by structural change (100 percent) and institutional context (83.3 percent). Similarly, 100 percent of the top-income premiums are moderated by processes of structural change and institutional context.

What can these results tell us about the relative importance of labor market mechanisms versus those among top incomes that are independent of the labor market? To answer this question, Figure 5 compares the sum of the maximum impact of labor market penalties and premiums to that for the top-income premium for each process of structural change and institutional context. First, the disequalizing effect of structural change on labor market penalties and premiums is smaller than its disequalizing effect on top incomes. Second,
conversely, the equalizing effect of egalitarian institutions on top-income premiums is smaller than their equalizing effects in the labor market.

**Sensitivity Analyses**

To assess the sensitivity of our results to alternative empirical choices and explanations, we conduct a series of additional analyses. First, some interesting work reveals that the FIRE-sector premium is larger at the higher end of the income distribution (see Lin 2015). Thus, we explored if the FIRE-sector premium and/or the impact of Financialization on the FIRE-sector premium varied between the bottom and top 10 percent if the distribution. We did observe a larger FIRE-sector premium in the top 10 percent among household heads but not household partners. However, the interaction between the FIRE-sector premium and financialization did not vary between the two groups. We also replicated our regression analysis after replacing our measure of financialization (the employment share in FIRE) with a common alternative in cross-national research: the ratio of value added in the FIRE sector to GDP. These results were substantively identical: financialization moderates only managerial premiums (head and partner) in the labor market, and these effects were much smaller than its effect on the top-income premium. Thus, we conclude that the relationship between financialization and the FIRE-sector premium is well captured by the results reported above.

We also checked sample composition effects. Although our analysis includes every LIS observation for which data are available, the panels are nevertheless unbalanced. Thus, we tested the null hypothesis on all our interaction terms with a nonparametric jackknife procedure. These results did provide a small amount of evidence against our reported finding that FIRE sector salaries are not an important mechanism by which financialization affects inequality because the FIRE sector partner \(\times\) financialization interaction was significantly different from zero. However, the magnitude of this interaction was very small and much smaller than the interaction with managerial and (particularly) top-income premiums. Moreover, the interaction between FIRE sector partner and financialization was not significant in a jackknife analysis of the regressions that replaced the employment share of FIRE with the alternative measure of FIRE discussed previously.

In Figure 3, we calculate the maximum impact to standardize the comparison of changes in income penalties and premiums across macro-factors with different distributions. However, this approach to standardization may be susceptible to outliers. Thus, we also consider a different comparison. Here, we calculate the change in the penalty/premium across 1 standard deviation above and below the mean of the focal macro-factor. These yield substantively identical conclusions.

Finally, our use of one-tailed hypothesis tests was driven both by substantive and data concerns. Substantively, all our key hypotheses are clearly directional. The data concerns relate to the severely limited degrees of freedom discussed earlier. Nevertheless, some of our cross-level interactions would only achieve “significance” at the .10 level if we used
nondirectional (or jackknife) hypothesis tests (see Table 5). Excluding these would change our substantive conclusion in the following sense: Premiums would still be more important than penalties, but high-skill premiums would be slightly more important mechanisms for institutional context than managerial premiums. Nevertheless, managerial premiums remain the most important labor market mechanism overall.

**Conclusion**

How do structural change and institutional context affect income inequality in rich democracies? Our analysis focuses upon the micro-mechanisms theorized in macro-level research. These micro-mechanisms feature extensively in the inequality literature, yet past research does not assess these mechanisms empirically. In particular, we examine three processes of structural change—economic globalization, TC, and financialization—and three types of egalitarian institutions—unionization, wage coordination, and welfare states—that dominate the macro-comparative sociological literature. Our results suggest that these processes either exacerbate or ameliorate the penalties and premiums to skill and workplace authority in the labor market, as well as the top-income premium. Our analysis yields four broad contributions.

First, our analysis sheds new empirical light on the micro-mechanisms by which each processes of structural change and type of egalitarian institution affect income inequality. The impacts of TC work through both skill and workplace authority in the labor market and through top incomes outside the labor market (cf. Leicht 2008). Financialization’s effects are limited to income premiums but in ways that are somewhat surprising. Financialization increases managerial premiums rather than FIRE-sector premiums, per se. Most of its impact can be attributed to the rising premium of top incomes. Although the absence of moderating effects for FIRE-sector premiums is surprising, these results are broadly consistent with sociological accounts linking financialization to the rising bargaining power of management (Lin and Tomaskovic-Devey 2013; Tomaskovic-Devey and Lin 2011) and top end incomes (Lin 2015) and may also point to heterogeneity within the FIRE sector. Globalization’s effect is diffused among several channels inside and outside the labor market. It exacerbates low-skill penalties (heads) and premiums to high skills and management (heads and partners). These effects are entirely consistent with more recent work on the distributional effects of globalization (e.g., Alderson and Nielsen 2002; Mahutga et al. 2017). However, our analysis is the first to demonstrate a positive effect of the globalization of production on top incomes (cf. Egger et al. 2019; Piketty and Saez 2013).

Among the egalitarian institutions examined, unions reduce the low-skill penalty (heads), as well as the income premiums to high skills (heads and partners), management (heads), and top-income premiums. Wage coordination and welfare state generosity reduce the income premiums to high skills (heads) and management (heads and partners), as well as the top-income premium. However, welfare states also provide a modest boost to households headed by low-skilled earners (e.g., Mahutga et al. 2017).

Second, consistent with the greater distributional weight of “upper-tail” inequality observed elsewhere (Alderson et al. 2005), we observe that income premiums are much more important micro-mechanisms than income penalties. Summing the absolute value of all changes in penalties and premiums, respectively, in Figure 3, changes to premiums are just over 27 times larger than changes to penalties. Thus, although arguments linking rising inequality to the immiseration of the working class are not without evidence, these micro-mechanisms appear much less important than income premiums. That said, there is of course a floor effect to income penalties (income typically does not extend below zero) that is not true of income premiums, and a similar percent decline among the very poor has a larger effect on consumption vis-à-vis the rich. Moreover, poor households could be disproportionately harmed by structural change if it increases the probability of deep economic crises because such crises can be particularly harmful for the poor.

Third, some of the micro-mechanisms proposed in the literature are clearly more important than others. In the labor market, workplace authority is the most important micro-mechanism (e.g., Wodtke 2016), followed closely by the high-skill premium. However, our analysis highlights the saliency of micro-mechanisms unique to top incomes (e.g., Kenworthy 2017). All the processes of structural change and egalitarian institutions moderate the top income share, and these moderations are larger than any single labor market process. This is a particularly noteworthy observation because top-income premiums are largely independent from penalties and premiums in the labor market (see Figure 2), and the effects we observe in this premium attributable to structural change and institutional context are net of their effects on all the micro-mechanisms observed in the labor market.

Fourth, our analysis of the micro-mechanisms by which structural change and institutional affect penalties and premiums is relevant for policy discussions about the phenomena of rising income inequality. One implication follows from the disproportionately countervailing effects of structural change and institutional context in the labor market and among top incomes. The foregoing analysis suggests that the top-income premium is the most important mechanism for structural change, whereas labor market penalties and premiums are more important mechanisms for institutional context. To further investigate this possibility, Figure 6 displays six scatterplots. Column 1 shows the bivariate association between LIS Gini coefficients and composite scores for structural change (top row) and institutional context (bottom

---

7We thank an anonymous reviewer for pointing this out.
row). These composite scores are formed by first standardizing each measure of structural change/institutional context and then summing the z scores. All variables are country demeaned. Columns 2 and 3 display bivariate associations between “residual Gini coefficients” constructed with the residuals from regressions of Gini coefficients on labor market premiums (column 2) and top-income premiums (column 3). Comparing across columns, these results suggest that labor market premiums explain only 3.4 percent of the association between Gini coefficient and structural change, whereas top-income premiums explain 31.9 percent. Conversely, 42.5 percent of the association between institutional context and Gini coefficient is explained by labor market premiums, compared with only 9.1 percent for top-income premiums. Moreover, when considering the top 25 percent of top-income premiums we observe, the list of countries includes those with both relatively inegalitarian institutional contexts (e.g., the United States after 2000, Austria in 2013) as well as those with relatively egalitarian contexts (e.g., Finland after 2000, Germany after 2004, Belgium in 2000, Greece after 2000).

If it is true that processes affecting top incomes are the bulk of the story of contemporary inequality trends (Alderson et al. 2005; Kenworthy 2017; Piketty 2013), the disproportionate focus on three key postwar egalitarian institutions on the labor market may undermine their distributional efficacy. Although our article provides an important first step toward unpacking the micro-mechanisms of macro-contextual drivers of inequality, additional research is needed. Indeed, the disproportionate role of the top-income premium in the distributional mechanisms of structural change and institutional context should animate examinations of the mechanistic role it plays in additional macro-level processes.

The foregoing analysis is important for its scope: we link six well-studied types of structural change and institutional context to five types of micro-mechanisms. However, we have also omitted additional possible mechanisms. For example, Crouch (2009), Leicht and Fitzgerald (2006), and others argue that “easy credit” and subsequent debt could be

---

8These percentages are given by (observed – residual)/observed × 100.
key mechanisms linking financialization to inequality. Similarly, cross-country differences in the size of the service sector, the adoption of the shareholder theory of value, the spread of educational attainment, and so on, are likely macro-mechanisms through which structural change and/or institutional context affect inequality. Indeed, Figure 6 suggests that a significant share of the association between inequality and structural change or institutional context remains unexplained by micro-level factors. Similarly, additional types of structural change (e.g., deindustrialization) and institutional contexts (e.g., top tax rates or tax progressivity, government partisanship, works councils) could also be decomposed to better understand how their distributional effects operate (Huber et al. 2019).

We offer one final interpretive caveat. As is implied in our discussion of our empirical framework (see equations 1 and 2), the relative importance of these micro-mechanisms for the distributional effects of macro-context overall depends on the changing income shares accruing to households that occupy the penalties and premiums analyzed above and on the share of the population represented by these penalties and premiums. Our results can speak forcefully to the former but not to the movement of the population into and out of these penalties and premiums. Fully explicating the relative importance of these penalties and premiums would thus require an analysis of how households respond to the changing economic incentives that structural change and institutional context create.

### Appendix A

#### Table A1. Base Effects from Interaction of Skill, Workplace Authority, and the 1 Percent with Macro-context.

| Top Incomes | (1) | (2) | (3) | (4) | (5) | (6) |
|-------------|-----|-----|-----|-----|-----|-----|
| Household composition | | | | | | |
| Single female head | .000 (.008) | .000 (.008) | .001 (.008) | -.000 (.007) | -.000 (.008) | .000 (.008) |
| Single mother head | -.099*** (.007) | -.099*** (.007) | -.099*** (.007) | -.099*** (.007) | -.098*** (.007) | -.099*** (.007) |
| Dual-earner household | .076*** (.007) | .077*** (.008) | .076*** (.008) | .076*** (.007) | .076*** (.007) | .076*** (.007) |
| Head labor market | | | | | | |
| High education | .097*** (.013) | .076** (.022) | .126*** (.011) | .157*** (.011) | .154*** (.004) | .200*** (.015) |
| Low skill | -.088*** (.007) | -.089*** (.009) | -.100*** (.005) | -.116*** (.007) | -.110*** (.005) | -.135*** (.011) |
| Manager | .060*** (.005) | .047* (.013) | .021 (.015) | .084*** (.007) | .088*** (.005) | .106*** (.015) |
| FIRE-sector worker | .045*** (.002) | .045*** (.003) | .033 (.031) | .046*** (.002) | .045*** (.002) | .045*** (.002) |
| Partner labor market | | | | | | |
| High education | .043*** (.009) | .048* (.019) | .060*** (.002) | .073*** (.004) | .065*** (.005) | .071*** (.019) |
| Low skill | -.060*** (.011) | -.054* (.017) | -.057*** (.004) | -.055*** (.007) | -.061*** (.006) | -.081*** (.018) |
| Manager | .030* (.011) | .018 (.020) | .009 (.020) | .073*** (.008) | .076*** (.004) | .126*** (.010) |
| FIRE-sector worker | .051*** (.003) | .051*** (.003) | .072*** (.011) | .051*** (.003) | .051*** (.003) | .051*** (.003) |
| Baseline | | | | | | |
| Unemployed household | -.155*** (.032) | -.154*** (.030) | -.147*** (.032) | -.150*** (.031) | -.157*** (.031) | -.153*** (.031) |
| Household age | .012*** (.001) | .012*** (.001) | .012*** (.001) | .012*** (.001) | .012*** (.001) | .012*** (.001) |
| Household age squared | -.000*** (.000) | -.000*** (.000) | -.000*** (.000) | -.000*** (.000) | -.000*** (.000) | -.000*** (.000) |
| Other household earner income | .014*** (.001) | .014*** (.001) | .014*** (.001) | .014*** (.001) | .014*** (.001) | .014*** (.001) |

Note: Unstandardized coefficients are presented, with heteroskedastic and serial correlation–consistent standard errors in parentheses. Unknown education, period, and country fixed effects not shown.

*p < .05, **p < .01, and ***p < .001 (one-tailed tests).

### Acknowledgments

We thank David Brady, Steven Brint, Kevan Harris, Joel Herrera, Scott Savage, Carolyn M. Sloane, participants of the Sociology Seminar Series at the University of California, Los Angeles, and the University of Tennessee, the Mellon Seminar for Advancing Intercultural Studies and the Political Economy Working Paper Group at the University of California, Riverside, and attendees of the annual meetings of the American Sociological Association (2017) and International Studies Association (2018).

### Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This research was funded by the National Science Foundation (grant 1528703).

### ORCID iDs

Matthew C. Mahutga [https://orcid.org/0000-0003-4696-529X](https://orcid.org/0000-0003-4696-529X)

Michaela Curran [https://orcid.org/0000-0003-3981-9550](https://orcid.org/0000-0003-3981-9550)
References

Acemoglu, Daron. 2002. “Technical Change, Inequality, and the Labor Market.” Journal of Economic Literature 40(1):7–72.

Alderson, Arthur S., Jason Beckfield, and François Nielsen. 2005. “Exactly How Has Inequality Changed? Patterns of Distributional Change in Core Societies.” International Journal of Comparative Sociology 46(5–6):405–23.

Alderson, Arthur S., and François Nielsen. 2002. “Globalization and the Great U-Turn: Income Inequality Trends in 16 OECD Countries.” American Journal of Sociology 107(5):1244–99.

Anderson, Christopher J., and Jonas Pontusson. 2007. “Workers, Worries and Welfare States: Social Protection and Job Insecurity in 15 OECD Countries.” European Journal of Political Research 46(2):211–35.

Author, David H., Frank Levy, and Richard J. Murnane. 2003. “The Skill Content of Recent Technological Change: An Empirical Exploration.” Quarterly Journal of Economics 118(4):1279–1333

Becker, Gary. 1985. “Human Capital, Effort, and the Sexual Division of Labor.” Journal of Labor Economics 3(1):S33–58.

Bradley, David, Evelyne Huber, Stephanie Moller, François Nielsen, and John Stephens. 2003. “Distribution and Redistribution in Post-industrial Democracies.” World Politics 55:193–228.

Brady, David, Ryan Finnigan, and Sabine Huebgen. 2017. “Rethinking the Demographic Risks of Poverty: Prevalences and Penalties in Comparative Perspective.” American Journal of Sociology 123(3):740–86

Brady, David, Evelyne Huber, and John D. Stephens. 2014. “Comparative Welfare States Data Set.” Chapel Hill: University of North Carolina and WZB Berlin Social Science Center.

Braumoeller, Bear F. 2004. “Hypothesis Testing and Multiplicative Interaction Terms.” International Organization 58(4):807–20.

Budig, Michelle J., and Paula England. 2001. “The Wage Penalty for Motherhood.” American Sociological Review 66(2):204–25.

Burtless, Gary. 1999. “Effects of Growing Wage Disparities and Changing Family Composition on the US Income Distribution.” European Economic Review 43(4–6):853–65.

Cancian, Maria, and Deborah Reed. 1999. “The Impact of Wives’ Earnings on Income Inequality: Issues and Estimates.” Demography 36(2):173–84.

Cohen, Philip N., and Matt L. Huffman. 2003. “Individuals, Jobs, and Labor Markets: The Devaluation of Women’s Work.” American Sociological Review 68:443–65.

Correll, Shelley J., Stephen Benard, and In Paik. 2007. “Getting a Job: Is There a Motherhood Penalty?” American Journal of Sociology 112(5):1297–1338.

Crouch, Colin 2009. “What Will Follow the Demise of Privatized Keynesianism?” Political Quarterly 80(S1):S302–15.

Daly, Mary C., and Robert G. Valletta. 2006. “Inequality and Poverty in United States: The Effects of Rising Dispersion of Men’s Earnings and Changing Family Behaviour.” Economica 73(289):75–98.

Dencker, John C. 2009. “Relative Bargaining Power, Corporate Restructuring, and Managerial Incentives.” Administrative Science Quarterly 54(3):453–85.

Egger, Peter H., Sergey Nigal, and Nora M. Streecher. 2019. “The Taxing Deed of Globalization.” American Economic Review 109(2):353–90.

Esping-Andersen, Gøsta. 1990. The Three Worlds of Welfare Capitalism. Princeton, NJ: Princeton University Press.

Frank, Robert H., and Philip J. Cook. 1996. The Winner-Take-All Society: Why the Few at the Top Get So Much More Than the Rest of U.S. New York: Penguin.

Firebaugh, Glenn. 2003. The New Geography of Global Income Inequality. Cambridge, MA: Harvard University Press.

Figsstein, Neil, and Taekjin Shin. 2007. “Shareholder Value and the Transformation of the U.S. Economy, 1984–2000.” Sociological Forum 22(4):399–424.

Freeman, Richard. 2007. “The Great Doubling: The Challenge of the New Global Labor Market.” Chap. 4 in Ending Poverty in America: How to Restore the American Dream, edited by J. Edwards, M. Crain, and A. L. Kalleberg. New York: New Press.

Gerstel, Naomi, and Dan Clawson. 2014. “Class Advantage and the Gender Divide: Flexibility on the Job and at Home.” American Journal of Sociology 120(2):395–431.

Goos, Maarten, Alan Manning, and Anna Salomons. 2014. “Explaining Job Polarization: Routine-Biased Technological Change and Offshoring.” American Economic Review 104(8):2509–26.

Gottschalk, Peter, and Timothy M. Smeeding. 1997. “Cross-National Comparisons of Earnings and Income Inequality.” Journal of Economic Literature 35(6):633–87.

Grossbard, Shoshana. 2006. Jacob Mincer: A Pioneer of Modern Labor Economics. New York: Springer.

Guell, Dominique, and Caroline Paunov. 2017. “Digital Innovation and the Distribution of Income.” NBER Working Paper No. 23987. Cambridge, MA: National Bureau of Economic Research. Retrieved September 5, 2022. https://www.nber.org/papers/w23987.pdf.

Gustafsson, Bjorn, and Mats Johansson. 1999. “In Search of Smoking Guns: What Makes Income Inequality Vary over Time in Different Countries?” American Sociological Review 64:585–605.

Hicks, Alexander M., and Duane H. Swank. 1992. “Politics, Institutions and Welfare Spending in Industrialized Democracies, 1960–1982.” American Political Science Review 86:658–74.

Huber, Evelyne, and John D. Stephens. 2001. Development and Crisis of the Welfare State: Parties and Policies in Global Markets. Chicago: University of Chicago Press.

Huber, Evelyn, Jingjing Huo, and John D. Stephens. 2019. “Power, Policy, and Top Income Shares.” Socio-economic Review 17(2):231–53.

Jantti, Markus. 1997. “Poverty in the United States and Europe: A Review.” Review of Income and Wealth 42(2):233–40.

Kahn, Joan R., Javier Garcia-Manglano, and Suzanne M. Bianchi. 2014. “The Motherhood Penalty at Midlife: Long-Term Effect of Children on Women’s Careers.” Journal of Marriage and the Family 76(1):56–72.

Katz, Lawrence F., and David H. Autor. 1999. “Changes in the Wage Structure and Earnings Inequality.” Pp. 1463–1555 in Handbook of Labor Economics, Vol. 3A, edited by O. C. Ashenfelter and D. Card. Amsterdam: Elsevier.

Kenworthy, Lane. 2001. “Wage-Setting Measures: A Survey and Assessment.” World Politics 54:57–98.

Kenworthy, Lane. 2017. “Why the Surge in Income Inequality?” Contemporary Sociology 46(1):1–9.

Kenworthy, Lane, and Jonas Pontusson. 2005. “Rising Inequality and the Politics of Redistribution in Affluent Countries.” Perspectives on Politics 3(3):449–71.
Kollmeyer, Christopher. 2009. “Consequences of North-South Trade for Affluent Countries: A New Application of Unequal Exchange Theory.” Review of International Political Economy 16(5):803–26.

Korpi, Walter. 1985. “Power Resources Approach vs. Action and Conflict: On the Causal Intentional Explanations in the Study of Power.” Sociological Theory 3(2):31–45.

Krippner, Greta R. 2005. “The Financialization of the American Economy.” Socio-economic Review 3(2):173–208.

Krippner, Greta R. 2012. Capitalizing on Crisis: The Political Origins of the Rise of Finance. Cambridge, MA: Harvard University Press.

Kuh, Moritz, Moritz Schularick, and Ulrike Steins. 2018. “Income and Wealth Inequality in America, 1949–2016.” CEPR Discussion Paper No. DP12218. Retrieved September 5, 2022. https://ssrn.com/abstract=3018472.

Lee, Cheol-Sung. 2005. “Income Inequality, Democracy, and Public Sector Size.” American Sociological Review 70(1):158–81.

Lee, Cheol-Sung, Young-Bum Kim, and Jae-Mahn Shim. 2011. “The Limit of Equality Projects: Public-Sector Expansion, Sectoral Conflicts and Income Inequality in Postindustrial Economies.” American Sociological Review 76(1):100–24.

Leicht, Kevin T. 2008. “Broken Down by Race and Gender? Sociological Explanations of New Sources of Earnings Inequality.” Annual Review of Sociology 34:237–55.

Leicht, Kevin T., and Scott Fitzgerald. 2006. Postindustrial Peasants: The Illusion of Middle-Class Prosperity. New York: Worth.

Lin, Ken-Hou. 2015. “The Financial Premium in the US Labor Market: A Distributional analysis.” Social Forces 94(1):1–30.

Lin, Ken-Hou, and Donald Tomaskovic-Devey. 2013. “Financialization and U.S. Income Inequality, 1970–2008.” American Journal of Sociology 118:1284–1329.

Link, Bruce G., and Jo Phelan. 1995. “Social Conditions as Fundamental Causes of Disease.” Journal of Health and Social Behavior Extra Issue:80–94.

LIS (Luxembourg Income Study). 2018. “New Complementary Database: Routine Task Intensity and Offshorability for the LIS.” LIS Cross-National Data Center in Luxembourg. Retrieved September 5, 2022. http://www.lisdatacenter.org/news-and-events/new-complementary-database-routine-task-intensity-and-offshorability-for-the-lis/.

Lu, Yuqian, René Morissette, and Tammy Schirle. 2011. “The Growth of Family Earnings Inequality in Canada, 1980–2005.” Review of Income and Wealth 57(1):23–39.

Lundberg, Shelly, Robert A. Pollak, and Jenna Stearns. 2016. “Family Inequality: Diverging Patterns in Marriage, Cohabitation, and Childbearing.” Journal of Economic Perspectives 30(2):79–102.

Mahutga, Matthew C., Michaela Curran, and Anthony Roberts. 2018. “Job Tasks and the Comparative Structure of Income and Employment: Routine Task Intensity and Offshorability for the LIS.” International Journal of Comparative Sociology 59(2):81–109

Mahutga, Matthew C., Anthony Roberts, and Ronald Kwon. 2017. “The Globalization of Production and Income Inequality in Rich Democracies.” Social Forces 96(1):181–214.

McCull, Leslie, and Christine Percheski. 2010. “Income Inequality: New Trends and Research Directions.” Annual Review of Sociology 36:329–47.

Michaels, Guy, Ashwini Natraj, and John Van Reenen. 2014. “Has ICT Polarized Skill Demand? Evidence from Eleven Countries over Twenty-Five Years.” Review of Economics and Statistics 96(1):60–77.

Moller, Stephanie, Arthur S. Alderson, and François Nielsen. 2009. “Changing Patterns of Income Inequality in U.S. Counties, 1970–2000.” American Journal of Sociology 114(4):1037–1101.

Morgan, Jana, and Nathan J. Kelly. 2013. “Market Inequality and Redistribution in Latin America and the Caribbean.” Journal of Politics 75(3):672–85.

Mughan, Anthony. 2007. “Economic Insecurity and Welfare Policy Preferences: A Micro-level Analysis.” Comparative Politics 39:293–310.

Neckerman, Kathryn M., and Florencia Torche. 2007. “Inequality: Causes and Consequences.” Annual Review of Sociology 33:335–57.

OECD (Organisation for Economic Co-operation and Development). 2016a. “OECD.Stat Trade Union Density.” Paris: Organisation for Economic Co-operation and Development.

OECD (Organisation for Economic Co-operation and Development). 2016b. “STAN Structural Analysis Database.” Paris: Organisation for Economic Co-operation and Development.

Pechil, Andreas, Thilo Schaefer, and Christoph Scheicher. 2010. “Measuring Richness and Poverty: A Micro Data Application to Europe and Germany.” Review of Income and Wealth 56(3):597–619.

Pfeffer, Fabian T., Sheldon Danziger, and Robert F. Schoeni. 2014. “Wealth Disparities before and after the Great Recession.” Annals of the American Academy of Political and Social Science 650(1):98–123.

Piketty, Thomas. 2013. Capital in the Twenty-First Century. Cambridge, MA: Harvard University Press.

Piketty, Thomas, and Emmanuel Saez. 2013. “Optimal Labor Income Taxation.” Pp 391–474 in Handbook of Public Economics, Vol. 5, edited by A. J. Auerback, R. Chetty, M. Feldstein, and E. Saez. New York: Elsevier.

Pontusson, Jonas, David Rueda, and Christopher R. Way. 2002. “Comparative Political Economy of Wage Distribution: The Role of Partisanship and Labour Market Institutions.” British Journal of Political Science 32(2):281–308.

Roine, Jasper, Jonas Vlachos, and Daniel Waldenstrom. 2009. “The Long-Term Determinants of Inequality: What Can We Learn from Top Income Data?” Journal of Public Economics 93(7–8):974–88.

Ridgeway, Cecilia L. 2011. Framed by Gender: How Gender Inequality Persists in the Modern World. New York: Oxford University Press.

Roberts, Anthony, and Roy Kwon. 2017. “Finance, Inequality, and Varieties of Capitalism in Postindustrial Democracies.” Socio-economic Review 15 (1): 511-538.

Rogers, William. 1994. “Regression Standard Errors in Clustered Samples.” Staata Technical Bulletin 3(13):19–23.

Rosenberg, Joseph. 2013. “Measuring Income for Distributional Analysis.” Urban-Brookings Tax Policy Center. Retrieved September 5, 2022. https://www.taxpolicycenter.org/publications/measuring-income-distributional-analysis/full.

Schwartz, Christine R. 2010. “Earnings Inequality and the Changing Association between Spouses’ Earnings.” American Journal of Sociology 115:1524–57.
Scruggs, Lyle, Detlef Jahn, and Kati Kuitto. 2014. “Comparative Welfare Entitlements Dataset 2. Version 2014-03.” Storrs: University of Connecticut and University of Greifswald.

Stepan-Norris, Judith, and Maurice Zeitlin. 2002. Left Out: Reds and America’s Industrial Unions. Cambridge, UK: Cambridge University Press.

Streeck, Wolfgang. 1987. “The Uncertainties of Management in the Management of Uncertainty.” Work, Employment and Society 1(3):281–308.

Tomaskovic-Devey, Donald, and Ken-Hou Lin. 2011. “Economic Rents and the Financialization of the U.S. Economy.” American Sociological Review 76:538–59.

Traxler, Franz. 1999. “The State in Industrial Relations: A Cross-National Analysis of Developments and Socioeconomic Effects.” European Journal of Political Research 36(1):55–85.

United Nations Statistics Division. 2016. “UN Comtrade.” New York: United Nations.

Visser, Jelle. 2016. “ICTWSS Database (Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts, 1960–2010), Version 3.0.”

Volscho, Thomas W., and Nathan J. Kelly. 2012. “The Rise of the Super Rich: Power Resources, Taxes, Financial Markets, and the Dynamics of the Top 1 Percent, 1949–2008.” American Sociological Review 77(5):679–99.

Wallerstein, Michael. 1999. “Wage-Setting Institutions and Pay Inequality in Advanced Industrial Societies.” American Journal of Political Science 43(3):649–80.

West, Brady T., Kathleen B. Welch and Andrzej T. Galecki. 2006. Linear Mixed Models: A Practical Guide Using Statistical Software. London: Chapman and Hall/CRC.

Western, Bruce. 1997. Between Class and Market: Postwar Unionization in the Capitalist Democracies. Princeton, NJ: Princeton University Press.

Western, Bruce, Deirdre Bloome, and Christine Percheski. 2008. “Inequality among American Families with Children, 1975–2005.” American Sociological Review 73(6):903–20

Western, Bruce, and Jake Rosenfeld. 2011. “Unions, Norms, and the Rise in U.S. Wage Inequality.” American Sociological Review 76(4):513–37.

Wood, Adrian. 1994. North-South Trade, Employment and Inequality: Changing Fortunes in a Skill-Driven World. Oxford, UK: Clarendon.

Wodtke, Geoffrey T. 2016. “Social Class and Income Inequality in the United States: Ownership, Authority, and Personal Income Distribution from 1980 to 2010.” American Journal of Sociology 121(5):1375–1415.

Author Biographies

Matthew C. Mahutga is a political economist at the University of California, Riverside. He has written dozens of papers on the themes of this article that are easy to find with a Google search. He also enjoys watching football, wine, fishing, cooking, the outdoors, working with graduate students, jazz, hip-hop, rock and roll, country and western, and punk rock.

Michaela Curran is a senior statistician at the CDC Foundation. Her research focuses on political economy and the structural determinants of health. Her work appears in the Journal of Health and Social Behavior, the International Journal of Comparative Sociology, Socius, and Cyberpsychology, Behavior, and Social Networking.