

# A longitudinal perspective on income inequality in the United States and Europe

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According to conventional inequality measures based on cross-sectional data, the United States has over the last 30 years exhibited not only the highest level of income inequality among industrialized nations, but also the fastest growth in the level of income inequality. Many European nations have also experienced acceleration in the growth of income inequality over the same period, but theirs has been less dramatic.

Inequality measures based on cross-sectional data may, however, overstate national differences in inequality by ignoring the economic mobility of individuals over time. This article addresses that shortcoming by using longitudinal data. The results confirm that the United States has the highest income inequality, and find no systematic cross-national differences in economic mobility. The analysis also sheds some light on why there is relatively little economic mobility in the United States.<sup>1</sup>

## The conventional view of income inequality differences

Much research has been conducted in an effort to understand why U.S. income inequality is so high and why it has been growing so rapidly. The research leaves little doubt that the U.S. economy features both the highest dispersion of wages and the highest inequality of standards of living in the industrialized world.<sup>2</sup> The United Kingdom has experienced inequality growth similar to that of the United States, although the growth did not occur until the 1980s, and it was brought to a halt by Tony Blair's Labour government in the late 1990s. Some European countries, such as Finland and Sweden, have also seen brief periods of growth in inequality during the 1990s, yet many countries, including Germany, France, and Canada, have experienced even less, if any, growth in income inequality.<sup>3</sup>

Most analysts agree that these persistent differences in the level of economic inequality across nations with the most advanced economies are attributable to differences in economic institutions between the United States and

Europe.<sup>4</sup> Chief among these differences are the nature and generosity of public safety nets and social services systems that result in stronger protection in Europe against the effects of adverse economic events. Another important difference is that labor unions in Europe are better able to negotiate more equitable wage policies than their counterparts in the United States. In Europe, the combination of more egalitarian tax and transfer systems and more compressed wage structures has contributed to the more equitable standards of living.

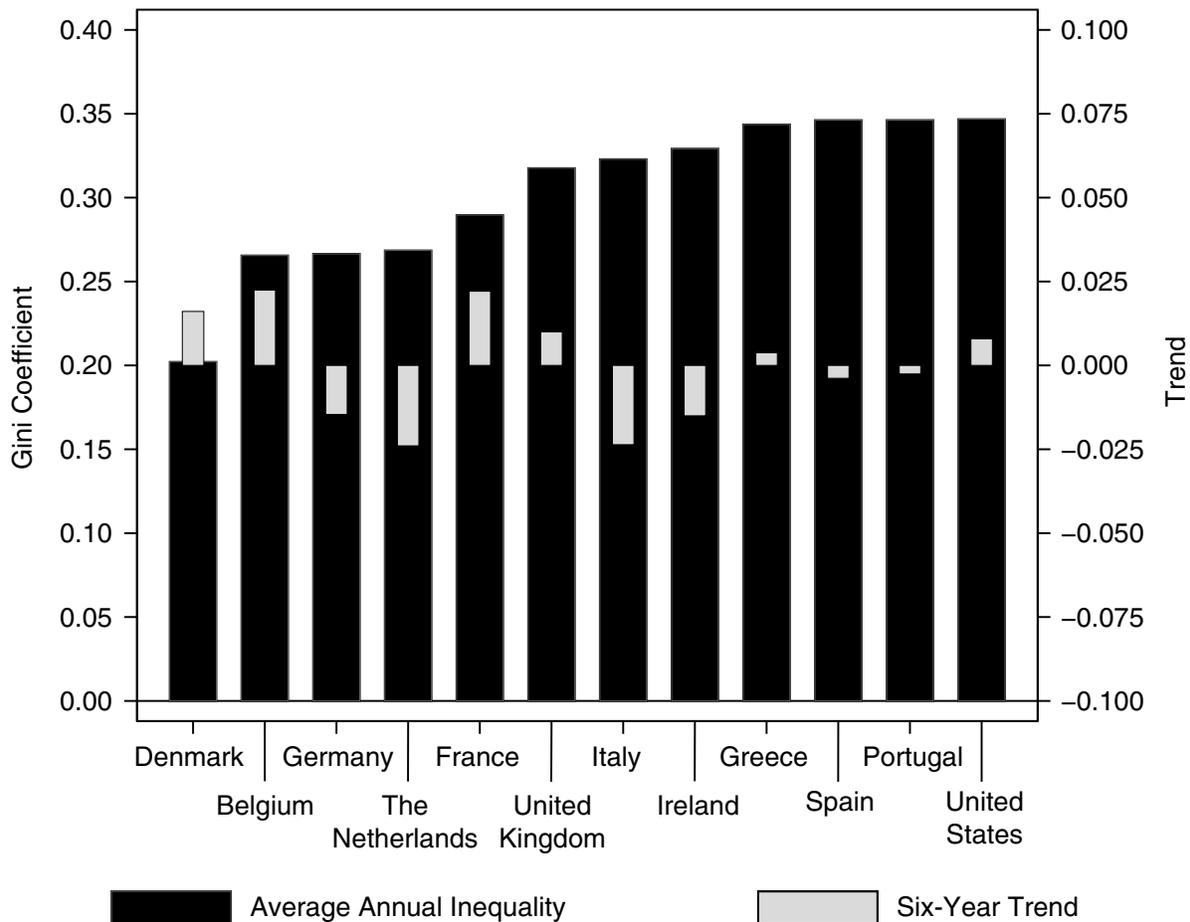
## Mobility bias in conventional income inequality data

This research intends to address important concerns about the role of time when assessing the impact of more egalitarian public policies. The vast majority of studies that compare economic inequality across nations have relied on cross-sectional income data for a sample of households or individuals whose current or past year's annual incomes have been recorded. Thus, conventional research rests on snapshots of economic inequality in different nations at specific points in time.

The problem with the study of the cross-sectional distribution of income is that the data do not account for economic mobility at the level of individuals and households. This matters because economic mobility may be an important mechanism that, over time, reduces economic inequalities that exist at any one point in time. For example, some poor or middle-class households may move up the income ladder, while some middle- or upper-class households may move down.

The problem is particularly acute in cross-national comparisons of societies that differ in the level of economic mobility they generate. When countries that appear most unequal in the cross-sectional data are also those with the most opportunities for upward mobility over time, significant mobility bias may result.

To address this bias, it is essential to use longer-term data that follow individual and household incomes over time. The few existing longitudinal studies confirm that economic mobility has significant egalitarian effects. For example, studies that used a full decade of income data report that cross-sectional inequality indices overstate permanent income inequality by 25 percent to 30 percent.<sup>5</sup>



**Figure 1: Income inequality in the United States and Europe, mid-1990s.**

**Sources:** European Community Household Panel (ECHP) 1994–99; Panel Study of Income Dynamics (PSID)—Cross-National Equivalent File 1992–97, own estimates.

**Notes:** Working-age population aged 25–54. Average annual inequality is the Gini coefficient for average annual disposable income averaged over six years, 1991 through 1996 in the United States and 1993 through 1998 in European countries. Six-year trend shows the change in the annual Gini coefficient over the same six-year periods.

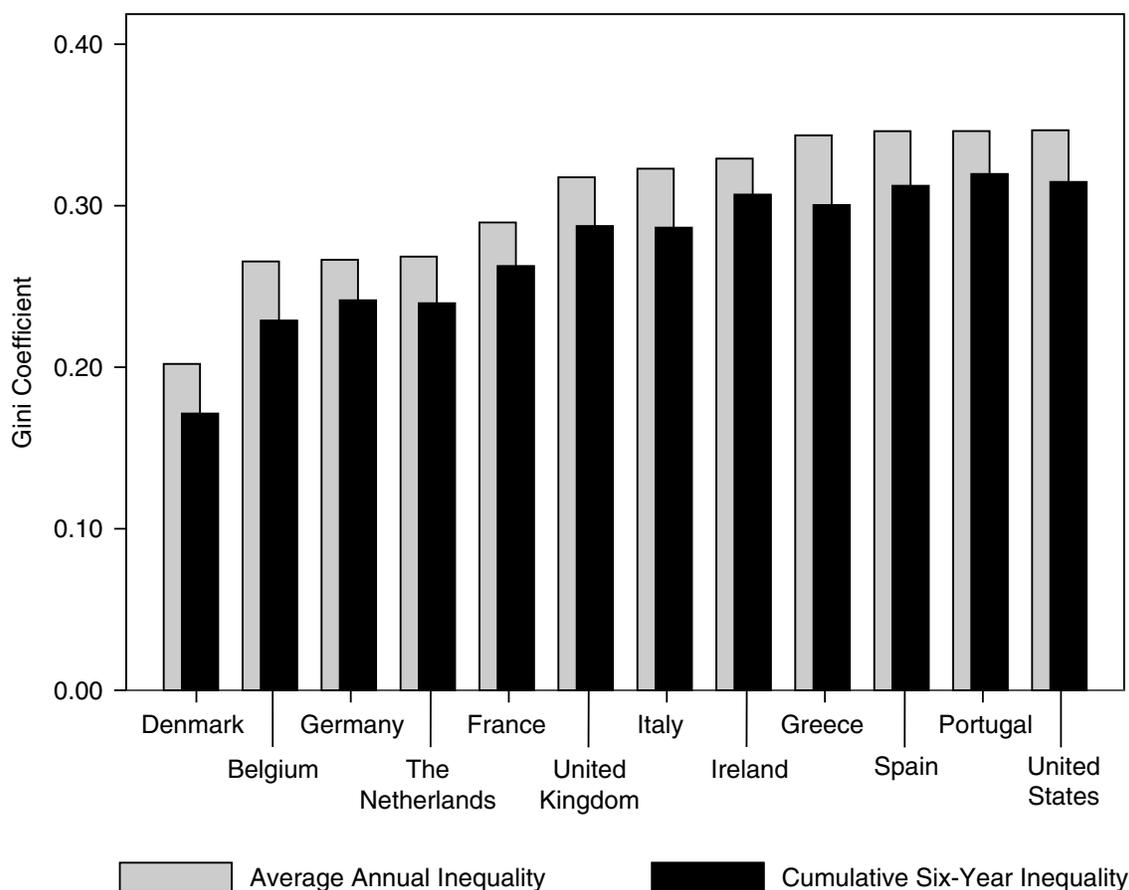
## An analysis of economic inequality based on longitudinal data

To address these concerns, the following analyses use longitudinal income data from the mid- to late 1990s, the most recent period for which extensive and comparable data is available, for the United States and eleven Western European states of the European Union. With this, the present study includes a more extensive set of countries than was available to previous studies of economic mobility. The analyses aim to provide a systematic cross-national comparison of income inequality and economic mobility for a broad range of countries that differ considerably, both with respect to labor market institutions and tax, transfer, and social services policies.

This analysis is based on standardized income data from the 1992–1997 Panel Study of Income Dynamics (PSID) and the 1994–1999 European Community Household Panel (ECHP).<sup>6</sup> The comparative dataset includes annual

income information over a period of six years for some 43,000 individuals from the United States, Belgium, Denmark, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain, and the United Kingdom.<sup>7</sup> The key variable of interest is the distribution of each individual's real disposable annual income, which serves as a summary measure of individual standard of living or well-being.<sup>8</sup> All income data are deflated to 1995 national currencies, and the new Organisation for Economic Co-operation and Development (OECD) equivalence scale is used to adjust incomes for the economies of scale in consumption that are associated with household size. Throughout the analysis, the sample has been restricted to the core working-age population of individuals aged 25 to 54.

While the key interest of this article is to assess cross-national differences in the level and structure of economic mobility longitudinally over a six-year period, it is helpful to begin the analysis with an examination of



**Figure 2: Inequality of annual and six-year real equivalent disposable incomes.**

**Sources:** European Community Household Panel (ECHP) 1994–99; Panel Study of Income Dynamics (PSID)—Cross-National Equivalent File 1992–97, own estimates.

**Notes:** Working-age population aged 25–54.

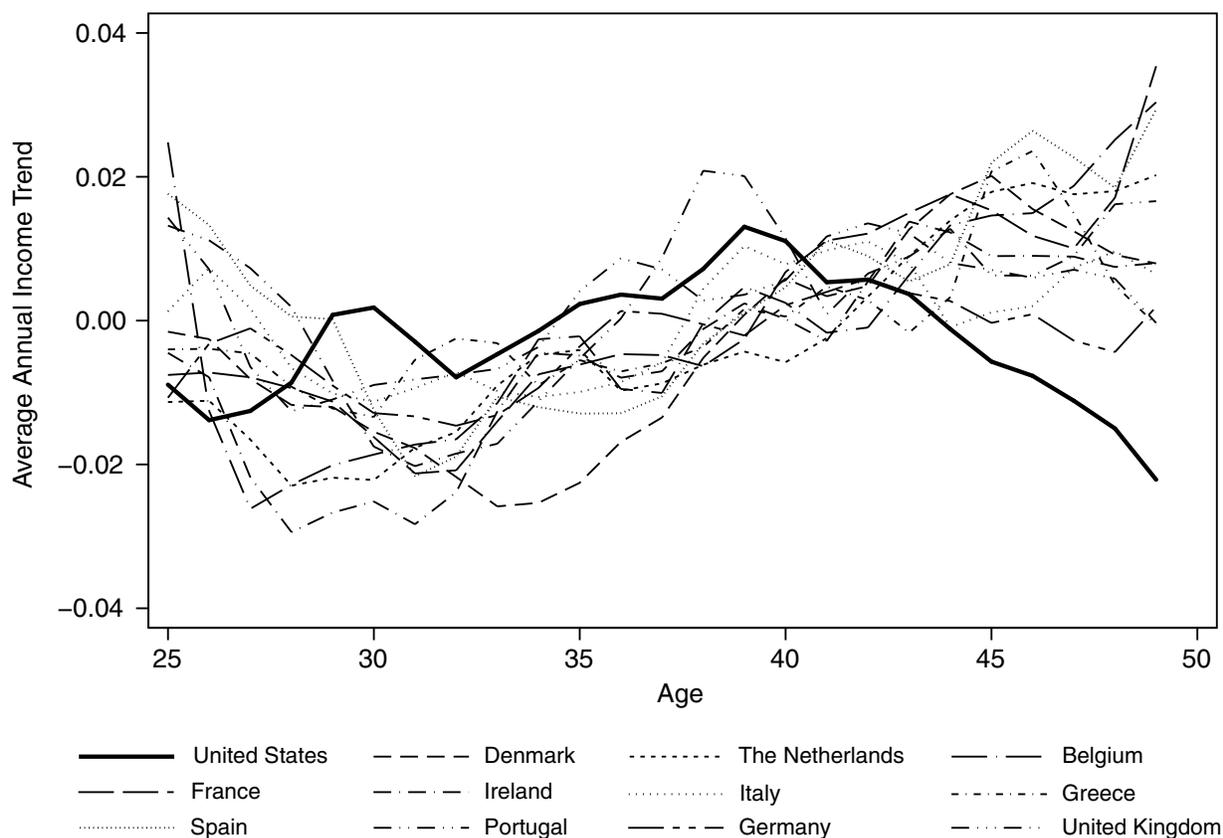
cross-national income inequality differences using cross-sectional data. Figure 1 shows the Gini coefficient for annual disposable incomes averaged over the six-year observation window.<sup>9</sup> The United States has the highest level of income inequality, confirming the conventional wisdom about cross-national differences.

However, longitudinal trends in income inequality among European countries in the mid- to late-1990s were quite heterogeneous. In the United States, the growth of income inequality came to a halt during the Clinton administration. This is reflected in a very small increase of less than one percentage point in the Gini using 1991 to 1996 income data. The only European country with a similar trend during the 1990s is the United Kingdom. Among the remaining countries in the analysis, Denmark, Belgium, and France had stronger inequality growth than either the United States or Britain; there was no change for most of the Southern European economies; and income inequality actually declined significantly in Germany, the Netherlands, Italy, and Ireland.

### Cross-national differences in economic inequality, the longer-term view

The longitudinal data underlying Figure 1 also allow us to address cross-national differences in income inequality while using cumulative incomes over a longer (six-year) observation window, thus taking economic mobility into account. Figure 2 shows the outcome of this analysis, comparing the findings using the six-year observation window to the average annual income figures shown in Figure 1.

Figure 2 clearly shows that the Gini coefficient for six-year incomes is consistently smaller than that for single-year incomes. For the United States, the Gini for the six-year period falls by a full three percentage points to .315, which suggests that 10 percent of U.S. income inequality that exists at any point in time is eroded over just six years. Decreases of similar magnitude between average annual inequality and six-year cumulative inequality are found in all 12 countries. The ratio between the Gini



**Figure 3: Life-cycle trends in log real equivalent incomes, age-specific slope parameters.**

**Sources:** European Community Household Panel (ECHP) 1994–99; Panel Study of Income Dynamics (PSID)–Cross-National Equivalent File (CNEF) 1992–97, own estimates.

**Notes:** Working-age population aged 25–54. Lowess-smoothed age-specific income trend parameters (bandwidth  $h = 0.25$ ).

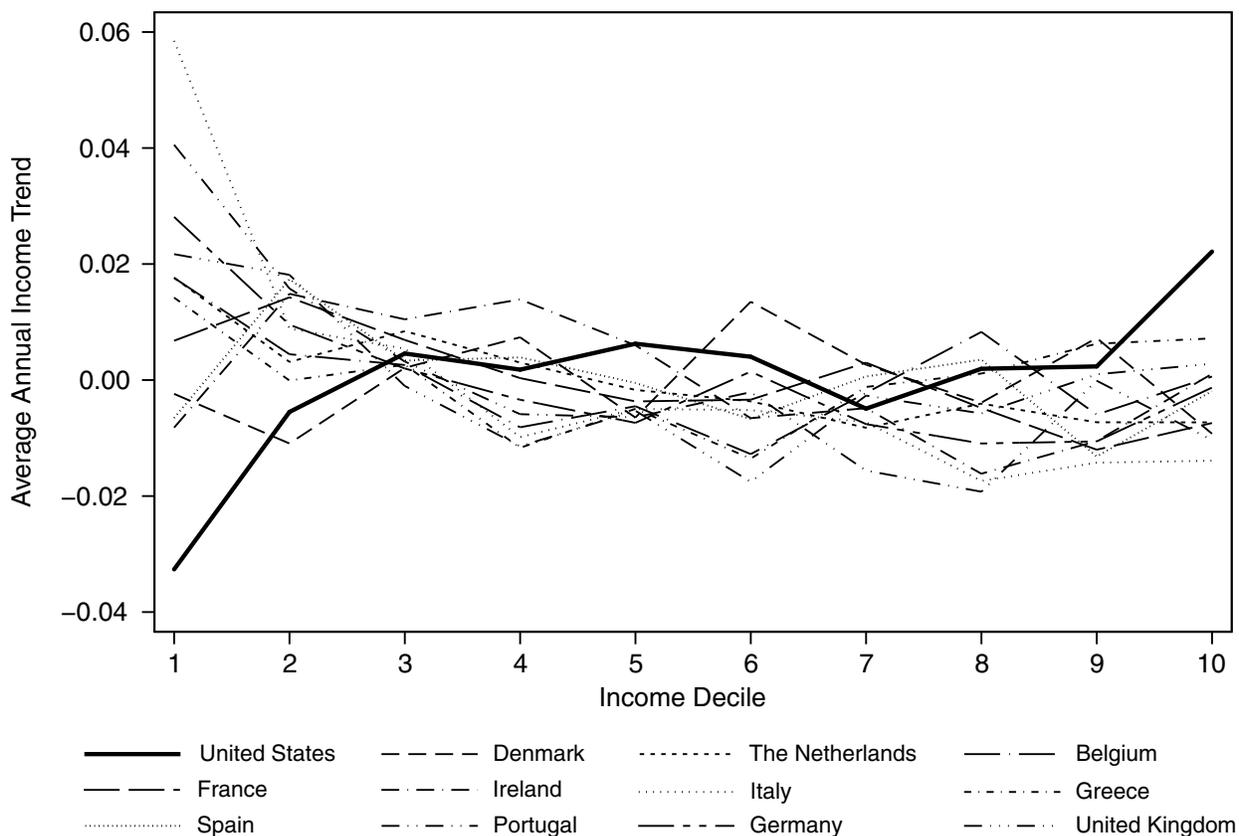
coefficient for six-year incomes and the Gini coefficient for single-year incomes (a measure of inequality persistence also known as Shorrocks's  $R$ ) ranges between .85 (Denmark) and .93 (Ireland). Thus, between 7 percent (in Ireland) and 15 percent (in Denmark) of point-in-time inequality is equalized by mobility within just six years.<sup>10</sup> The United States, where 10 percent of annual average income inequality was eroded over the six-year period, falls well within this range. The data thus provide no indication that European economies that feature strong safety net institutions would systematically generate any less mobility than the United States, with its smaller safety net programs and less robust labor union protections.

### American exceptionalism revisited, or, Why is there so little mobility in the United States?

It is surprising that so little economic mobility is evident in the U.S. data, particularly given the weaker nature of American labor market institutions and more *laissez-faire* public policies compared to those of most European countries.

To shed some light on this issue by examining the structure of income dynamics in greater detail, we used a regression model to decompose the data into a permanent income component (individual's average income over the six-year period) that we use to show age-specific lifestyle trends; a linear person-specific trend in individual income over the six-year observation window; and a transitory variance component that captures random fluctuations around an individual's income trend.

The U.S. pattern of economic mobility is clearly distinct from that of many European economies in all three income trend components. With respect to life-cycle patterns of economic mobility, the age-specific trend estimates in permanent income provided in Figure 3 show that, in virtually all European nations, there is a pattern of declining disposable incomes (relative to average income growth) during an individual's thirties and increasing incomes (again, relative to average income growth) during their forties and fifties. The U.S. pattern is just the opposite: an individual's standard of living rises throughout their thirties, but declines sharply afterwards. The degree to which older American workers fall behind, compared to older European workers, is noteworthy.



**Figure 4: Trends in log real equivalent incomes (bi) by permanent income position.**

**Sources:** European Community Household Panel (ECHP) 1994–99; Panel Study of Income Dynamics (PSID)–Cross-National Equivalent File (CNEF) 1992–97, own estimates.

**Note:** Working-age population aged 25–54. Arithmetic means of individual-specific income trends (parameter bi). Income deciles derived from the distribution of permanent incomes  $y_0$ .

Another clear-cut U.S.–European difference is evident in the analysis of individual mobility across the income distribution. Figure 4 illustrates the average individual income trend parameter separately by deciles of the distribution of permanent incomes over the six-year observation period. On this measure, economic mobility over time decidedly works to the advantage of the poor in most European countries, as incomes in the lower parts of the income distribution rise disproportionately relative to overall income growth. In contrast, in the United States, those at the bottom of the income distribution experienced income growth significantly below average (in fact, they experienced actual income losses), while incomes grew well above average for those at the top of the distribution.

Finally, the United States is exceptional in terms of the level of transitory income dynamics, that is, the level of random income change over time. In that sense, income instability in the United States is about three times as high as in European countries like Denmark, Germany, or France, and economic prospects for individuals and families are correspondingly much less predictable.

## Summary

Taking a longitudinal perspective does not fundamentally alter the conventional wisdom about cross-national differences in income inequality. During the 1990s, the United States continued to be the country with the highest level of income inequality in the industrialized world, and this outcome holds regardless of whether inequality is measured cross-sectionally at a single point in time, or longitudinally following the same households over a number of years. This finding is explained in part by cross-national differences in life-cycle patterns of economic mobility and by the polarization of the income distribution over time, both of which seem to be following more equalizing patterns in European countries than in the United States. If economic inequality is at least partly a matter of public policy, then the evidence suggests that strengthening labor unions and public safety net programs in the United States would promote greater economic equality. ■

<sup>1</sup>This article draws from Markus Gangl, "Income Inequality, Permanent Incomes, and Income Dynamics: Comparing Europe to the United States," *Work and Occupations* 32, No. 2 (May 2005): 140–162.

<sup>2</sup>A. B. Atkinson, L. Rainwater, and T. M. Smeeding, *Income Distribution in OECD Countries: Evidence from the Luxembourg Income Study* (Paris: Organisation for Economic Cooperation and Development, 1995).

<sup>3</sup>P. Gottschalk and T. M. Smeeding, "Empirical Evidence on Income Inequality in Industrialized Countries," in *Handbook of Income Distribution*, Vol. 1, eds. A. B. Atkinson and F. Bourguignon (Amsterdam: Elsevier, 2000).

<sup>4</sup>D. Bradley et al., "Distribution and Redistribution in Postindustrial Democracies," *World Politics* 55 (2003): 193–228; S. Moller et al., "Determinants of Relative Poverty in Advanced Capitalist Democracies," *American Sociological Review* 68 (2003): 22–51; and B. Western and K. Healy, "Explaining the OECD Wage Slowdown Recession or Labour Decline?" *European Sociological Review* 15 (1999): 233–249.

<sup>5</sup>M. Gittleman and M. Joyce, "Have Family Income Mobility Patterns Changed?" *Demography* 36 (1999): 299–314; and R. Aaberge, A. Björklund, M. Jäntti, M. Palme, P. J. Pedersen, N. Smith, and colleagues, "Income Inequality and Income Mobility in the Scandina-

vian Countries Compared to the United States," *Review of Income and Wealth* 48 (2002): 443–469.

<sup>6</sup>Further information on the data sources underlying this article is available in R. V. Burkhauser, B. A. Butrica, M. C. Daly, and D. R. Lillard, *The Cross-National Equivalent File: a Product of Cross-National Research* (Ithaca, NY: Cornell University, 2001); and Eurostat, *UDB Manual, European Community Household Panel Longitudinal Users' Database, Waves 1 to 6, Survey Years 1994 to 1999* [DOC. PAN 168/2002-12] (Luxembourg: Eurostat, 2002).

<sup>7</sup>Austria, Finland, and Sweden joined the European Union in 1995, yet are not considered in this analysis as respective ECHP data have only been provided since 1996.

<sup>8</sup>"Real disposable income" refers to post-tax, post-transfer income.

<sup>9</sup>The Gini coefficient is a standard statistic for measuring economic inequality. It ranges from 0 (when all individuals have identical incomes) to 1 (when all income is received by a single individual).

<sup>10</sup>In addition, this statement even applies in case of a conservative measure like the Gini coefficient that is most sensitive to mobility around the mode of the distribution. The Shorrocks's R coefficients are between .65 and .80 for the MLD, and .66 and .84 for the Theil coefficient, both inequality measures that are more sensitive to the tails of the income distribution.

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