Commentary: The Distribution of Income in Industrialized Countries

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Tony Atkinson has produced a first-rate paper carefully documenting recent trends in the distribution of income and earnings in advanced industrial nations. He demonstrates the important point that there is considerable heterogeneity among Organization for Economic Cooperation and Development (OECD) nations in both the level of economic inequality and in changes in the dispersion of income and earnings in the 1980s and 1990s. His paper also clearly shows that differences in income distribution among G-7 nations are sufficiently large to imply substantial consequences for living standards. The bottom quintile of the family income distribution appears to have lower real disposable income in the United States than in Germany, despite substantially higher mean incomes in the United States. The earnings of low-wage U.S. workers appear to be lower in PPP-adjusted real dollars than those of workers similarly situated in the earnings distribution in advanced Europe (Freeman, 1998).

Since I largely concur with the main themes of Atkinson‘s study, I would like to use this opportunity to elaborate further on the nature of changes in income and earnings inequality in OECD economies over the past two decades. But I should also note that although I agree with Atkinson’s conclusion that there is a “considerable diversity of national experience” in recent trends in income inequality, I do believe a somewhat common pattern of rising economic “inequity” is apparent in most industrialized nations since the 1970s. Such a pattern

is observed for OECD economies when one expands the measure of economic well-being to consider both the distributions of disposable family income and of employment opportunities. The countries with little or no increase in measured family income or earnings inequality, such as France and Italy, have suffered from a large and sustained rise in unemployment. In fact, every advanced economy except the United States has experienced a higher average unemployment rate in the 1990s (averaged from 1990 to 1997) than in the 1970s, with the overall unemployment rate in OECD Europe more than doubling from 4.5 percent in the 1970s to 10 percent in the 1990s (Katz, 1998, Table 1). Thus, each of the major OECD economies appears to have experienced a substantial increase in family income inequality, persistently high unemployment (typically concentrated on the less skilled), or both.

These patterns are suggestive of a strong labor market twist against the less educated and those from disadvantaged backgrounds that shows up differently in economies with varying labor market, social welfare, educational, and macroeconomic environments and policies (Katz, 1994; Freeman and Katz, 1995).[1] The epidemics of crime and a host of other social problems in areas of increasingly concentrated poverty in the United States (Wilson, 1996) and similar patterns occurring in areas of persistent joblessness in other OECD countries underscore the importance of the need to better understand these issues.

Trends in family income inequality

Table 1 further illustrates Atkinson‘s major point of a diversity of national experiences in income inequality trends since 1979 for a larger sample of OECD countries. Table 1 presents measures of changes in the inequality of disposable family income per adult equivalent using data from the Luxembourg Income Study (LIS) that has been carefully put together by Gottschalk and Smeeding (1997) to be as internationally comparable as possible. The first column of Table 1 follows Atkinson and shows the annualized percent increase in the Gini coefficient for disposable family income per adult equivalent in each country (the relative change in inequality), while the second

Table 1
Changes in Disposable Income Inequality Since 1979 in Selected OECD Countries

Country	Period	Annual Change in Gini Coefficient: Relative (percent)	Annual Change in Gini Coefficient: Absolute (point change)
United States	1979-93	1.07	0.37
United Kingdom	1979-95	1.80	0.50
Japan	1979-93	0.84	0.25
West Germany	1979-95	0.53	0.15
France	1979-89	0.40	0.12
Italy	1980-91	-0.64	-0.58
Canada	1979-95	-0.02	-0.01
Australia	1981-89	1.16	0.34
Denmark	1981-90	1.20	0.27
Finland	1979-94	-0.10	-0.02
Netherlands	1979-94	1.07	0.25
Norway	1979-92	0.22	0.05
Sweden	1979-94	1.68	0.38

Source: Gottschalk and Smeeding (1997), Figures 2 and 5, Table A1.
Notes: The relative (percent) change is the annualized percentage change in the Gini coefficient over the specified period. The absolute (point) change is 100 times the change in the Gini coefficient divided by the number of years in the specified period. The Gini coefficients for each country are based on data on household disposable income per equivalent adult.

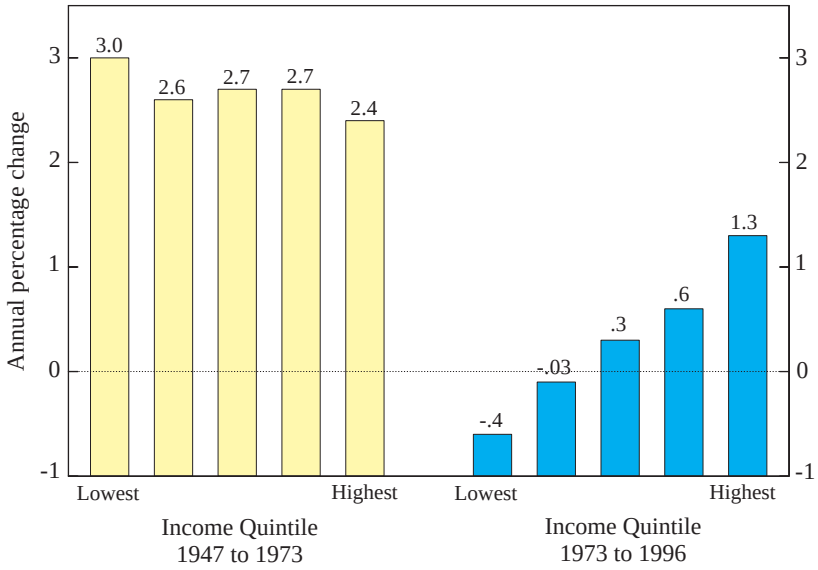
column shows the annual absolute increase in the Gini coefficient for each country. The much higher starting level of inequality in the United States means that the measures of proportional changes in inequality relative to each country‘s starting level, as emphasized by Atkinson, somewhat understate the larger magnitude of the growth in the gap of incomes between high- and low-income families in the United States than in most other OECD nations. The observed

increase in inequality in the United States has meant an increase in the relative income (adjusted for family size) of the 90th percentile family to the 10th percentile family of 36 percent from 6.7 in 1979 to 9.1 in 1995 (Karoly, 1998, Table 1). The United Kingdom does appear to have experienced the largest increase in family income inequality using both relative and absolute measures of changes in inequality. Large increases are also apparent in Sweden (actually starting after 1989) and Australia.

Although there are substantial differences in the magnitude of inequality trends among OECD nations, the LIS data indicate that most countries (10 of 13) appear to have experienced some increase in family income inequality. Atkinson's data also suggest that Italy, the country showing the largest deviation from this pattern of increases in the LIS data, shows some signs of rising inequality since 1991. Furthermore, the recent trends in income inequality do appear to represent a break from a pattern of sustained reductions in inequality in most advanced nations (especially Sweden) over much of the twentieth century, especially from the 1940s to the early 1970s (for example, Gottschalk and Smeeding, 1997, Appendix Table A1). Chart 1 illustrates this pattern for the United States of rapid and widely shared growth of family income favoring the lowest quintile from 1947 to 1973, changing into slower and much more unequal growth from 1973 to 1996.

The sharp growth in dispersion of money incomes in the United States has led some to question whether rising inequality also holds for broader measures of economic well-being. Recent research indicates that increased inequality in material resources since the 1970s appears to be a robust result for the United States across a wide variety of data sets and measures. For example, the U.S. Bureau of Census has put together a series of experimental measures of income inequality based on broader definitions of income that attempt to include the value of Medicaid, Medicare, and other in-kind government transfers in addition to money income. Although the level of inequality is lower when one includes in-kind transfers, similar trends of large increases in U.S. inequality since 1979 are apparent for money incomes and these broader measures of income (U.S.

Chart 1
Family Income, Average Annual Change, U.S.



Bureau of the Census, 1997). Data from the Consumer Expenditures Survey for the United States (Cutler and Katz, 1991; U.S. Department of Labor, 1995) and the Family Expenditure Survey for the United Kingdom (Blundell and Preston, 1998) also show large increases in the inequality of family consumption per adult equivalent in both countries since the 1970s. The consideration of changes in the value of and incidence of employment-based benefits (for example, health insurance, pensions, vacation time, other perquisites, safety on the job) also appears to exacerbate increases in inequality in the United States over the last two decades (for example, Pierce, 1997; Hamermesh, 1998).

Furthermore the rise in cross-sectional income inequality in the United States and the United Kingdom does not appear to be offset by a rise in income mobility. Gottschalk and Danziger (1998) document little change (and actually a modest decline) in income mobil-

ity (movements among quintiles of the family income distribution) in the United States from the late 1960s to the early 1990s. And Blundell and Preston (1998) find a rise in persistent inequality among younger households in Britain over the same period.

Atkinson makes another important point in indicating that evolutions in the income distribution do not only reflect changes in earnings inequality but are also affected by changes in government tax and transfer policies and changes in the distribution and share of nonlabor (capital) income.[2] But the importance of changes in earnings inequality for trends in income inequality is suggested by his finding that the countries with the large rise in income inequality (the United States and the United Kingdom) show little change in labor's share of national income. France has a large decline in labor's share but little or no rise in income and earnings inequality.

Rising inequality in labor market earnings also clearly appears to be the most important factor in rising income inequality in the United States. Burtless (1998) decomposes the growth in the inequality of adjusted family incomes for the United States into its component parts from 1979 to 1993. He finds that increases in earnings dispersion among male household heads plus a rise in the correlation of women's earnings with total family income, with women's earnings gains concentrated among women in high-income families, explain approximately 75 percent of the rise in the Gini coefficient over this period. Similarly, I find in a decomposition of data presented by Mishel, Bernstein, and Schmitt (1999, tables 1.16, 1.17, and 1.18) that increases in the wages of husbands and wives in the top quintile, relative to those in the bottom quintile, can explain 75 percent of a 36 percent (0.31 log point) increase in the mean income of the top quintile relative to the bottom quintile of U.S. married couple families (with a household head aged 25 to 54) from 1979 to 1996. And increases in relative hours worked by husbands and wives explain another 20 percent of the growing income gap across the top and bottom quintile, with changes in relative nonlabor incomes playing only a minor role. Thus, an understanding of the nature of changes in earnings inequality is essential for making progress in assessing the determinants of changes in income dispersion.

Changes in earnings inequality

Much work has carefully documented recent changes in the wage structure and distribution of earnings in the United States.[3] These changes can be summarized as follows:

– From the 1970s to the mid-1990s, wage dispersion increased dramatically for both men and women. The weekly earnings of a full-time, full-year worker in the 90th percentile of the U.S. earnings distribution (someone whose earnings exceeded those of 90 percent of all workers) relative to a worker in the 10th percentile (someone whose earnings exceeded those of just 10 percent of all workers) grew by approximately 45 percent for men and 35 percent for women from 1971 to 1995.

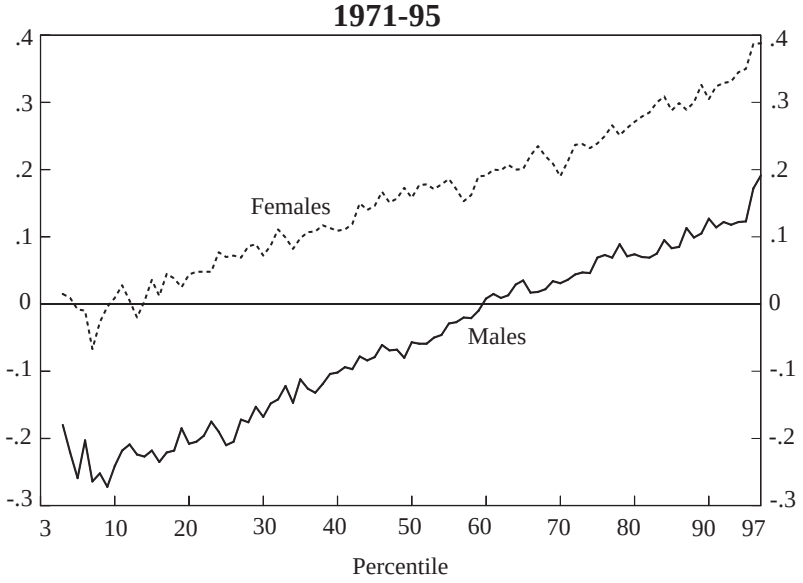
– Wage differentials by education and occupation increased. The labor market returns to years of formal schooling, academic achievement as measured by test scores, work-place training, and computer skills appear to have greatly increased in the 1980s and early 1990s. The earnings of young college graduates increased by 33 percent relative to those of young high school graduates from 1979 to 1995. But the gender differential in wages has narrowed substantially since 1979.

– Wage dispersion expanded within demographic and skill groups.

– The real earnings of less-educated and lower-paid workers appear to have declined relative to those of analogous workers two decades ago.

– Increased cross-sectional earnings inequality has not been offset by increased earnings mobility. Permanent and transitory components of earnings variation have risen by similar amounts (Gottschalk and Moffitt, 1994). But this implies that year-to-year earnings instability has also increased substantially over the last two decades.

Chart 2
Change in Log Real Weekly Wage by Percentile, 1971-95



Source: Katz and Autor (1998).

The overall spreading out of the U.S. wage distribution for men and women from 1971 to 1995 is illustrated in Chart 2 using data on real weekly wages of full-time, full-year workers from the March Current Population Survey (CPS).[4] The chart shows an almost linear spreading out of the wage distributions for both men and women, substantial gains of women on men throughout the wage distribution, and declining real earnings for males below the 60th percentile. The timing of overall rising wage inequality (as measured by the 90-10 log wage differential) for men and women is illustrated in Chart 3. Rising wage inequality (driven initially by increases in within-group inequality) began in the 1970s for men. The period from 1980 to 1985 of a deep recession and large decline in manufacturing employment is the period of most rapid growth of wage inequality. The rate of growth of wage inequality appears to have slowed down in the 1990s.

Chart 3
Overall U.S. Wage Inequality, 1963-96
90-10 Log Weekly Wage Differentials, FTFY, March CPS

Source: Katz and Autor (1998).

Sizable and somewhat accelerated demand shifts favoring more-skilled workers, a reduction in the rate of growth of the relative supply of more-educated workers, and institutional changes (the decline of unions and erosion of the minimum wage) all appear to have contributed to the large increase in U.S. wage inequality over the past two decades (Katz and Autor, 1998). The pattern of both some acceleration of relative demand shifts favoring the more-skilled (college equivalents) and a slowdown in relative supply growth with a small (baby-bust) cohort in the 1980s is illustrated in Table 2, where implied demand shifts are calculated assuming an aggregate elasticity of substitution between college and high school equivalent workers of 1.4 as estimated by Katz and Murphy (1992). The acceleration of demand shifts against the less skilled in 1980-96 versus 1960-80 reflects more rapid within-industry demand shifts since 1970 (Autor, Katz, and Krueger, 1998). Furthermore, the industries with most rapid rates of skill upgrading appear to be quite similar among Organization for Economic Cooperation and Development (OECD)

Table 2
Growth of College/High School Relative Wage, Supply, and Demand, United States, 1940-96
(100 x Annual Log Changes)

	Relative Wage	Relative Supply	Relative Demand
1940-60	-.51	2.63	1.92
1960-80	-.02	3.77	3.74
1980-96	1.10	2.49	4.02

Source: Autor, Katz, and Krueger (1998), Table II.
Notes: The relative wage measure is the log college-plus/high school wage differential, which is the weighted average of the estimated college (exactly 16 years of schooling) and post-college (17+ years of schooling) wage premium relative to high school workers (those with exactly 12 years of schooling). The differentials are estimated each year from log hourly wage regressions for wage and salary workers with dummies for single years of schooling, a quartic in experience, three region dummies, a part-time dummy, a female dummy, a nonwhite dummy, and interaction terms between the female dummy and the quartic in experience and the nonwhite dummy. The relative supply and demand measures are for college equivalents (college graduates plus half of those with some college) and high school equivalents (those with 12 or fewer years of schooling and half of those with some college). The implied relative demand changes assume an aggregate elasticity of substitution between college equivalents and high school equivalents of 1.4. The relative supply measure adjusts for compositional changes in the pools of college and high school equivalents.

nations (Berman, Bound, and Machin, 1998) and also appear to be the most computer-intensive and research-and-development-intensive industries (Autor, Katz, and Krueger, 1998). These patterns are consistent with an important role of skill-biased technological and organizational changes playing an important role in shifts in the labor market against the less skilled in advanced nations.[5] But they leave much room for differences among countries in changes in earnings inequality being affected by differences in patterns of changes in relative skill supplies (demographic factor and education/training policies) and labor market institutions. The direct effect of globalization forces also remains a difficult issue to assess.

Table 3 illustrates the variation among selected OECD countries in

changes in overall wage inequality for men from 1979 (or the earliest year available) to 1994 (or the latest year available). The United States and United Kingdom clearly show the largest increase in overall wage inequality. They also show the largest increases in educational and occupational wage differentials and in within-group or residual inequality. Canada, Australia, Japan, and Sweden had modest increases in wage inequality starting in the early 1980s. Wage differentials narrowed through the mid-1980s in Italy and France with some hint of expanding in France in the late 1980s and with a large increase in Italy in the 1990s following the abolition of an automatic cost-of-living index favoring low-wage workers (the *scala mobile*) and the ending of synchronization of bargaining across industries. New Zealand also shows large increases in inequality in a period following substantial deregulation of product and labor markets (OECD, 1996).

The patterns in Table 3 are suggestive of an important role of differences and changes in labor market institutions and regulations in explaining the cross-country divergence of wage structure changes in the 1980s and 1990s. In contrast, a common experience of narrowing educational and occupational wage differentials throughout the OECD was observed in the 1970s. Differences in supply and demand factors also appear to play an important role in which countries have seen larger increases in wage inequality (Freeman and Katz, 1995; Layard and Nickell, 1998). In particular, the countries with large increases in skill differentials, the United States and United Kingdom, also experienced substantial decelerations in the growth of relative skill supply growth (the relative supply of college equivalents) from the 1970s to the 1980s. Countries with little growth in educational wage differentials, such as France, Germany, and the Netherlands, show no slowdown in relative skills supply growth in the 1980s (Freeman and Katz, 1995). Murphy, Riddell, and Romer (1998) directly show that one goes far toward explaining differences in changes in the college wage premium in the United States and Canada through the much greater slowdown in growth of the supply of college equivalents in the United States than in Canada in the 1980s and 1990s.

Table 3
Trends in Wage Inequality for Males in Selected OECD Countries, 1979 to 1994[1]

Log of ratio of wage of 90th percentile earner to 10th percentile earner

Country	1979	1984	1989	1994	Change from earliest to latest year
Australia	1.01	1.01	1.03	1.08	.07
Austria[2]	.97		1.00		.03
Canada[3]	1.24	1.39	1.38	1.33	.09
Finland[4]	.89	.92	.96	.93	.04
France	1.22	1.20	1.25	1.23	.01
Germany[5]		.87	.83	.81	-.06
Italy	.83	.83	.77	.97	.14
Japan	.95	1.02	1.05	1.02	.07
Netherlands[6]		.92	.96	.95	.03
New Zealand[7]		1.00	1.12	1.15	.15
Norway[8]	.72	.72	.77	.68	-.04
Sweden[9]	.75	.71	.77	.79	.04
United Kingdom	.90	1.02	1.12	1.17	.27
United States	1.16	1.30	1.38	1.45	.29

Source: OECD (1996), Table 3.1, pp. 61-2.

Notes:

[1]The samples generally consist of full-time workers, with the exceptions of Austria, Italy, and Japan. See OECD (1996, pp. 100-103) for details on the samples and earnings measures.

[2]Data for Austria in the 1979 column are for 1980.

[3]Data for Canada are for 1980, 1986, 1990, and 1994

[4]Data for Finland are for 1980, 1983, 1989, and 1994.

[5]Data for Germany are for 1983, 1989, and 1993.

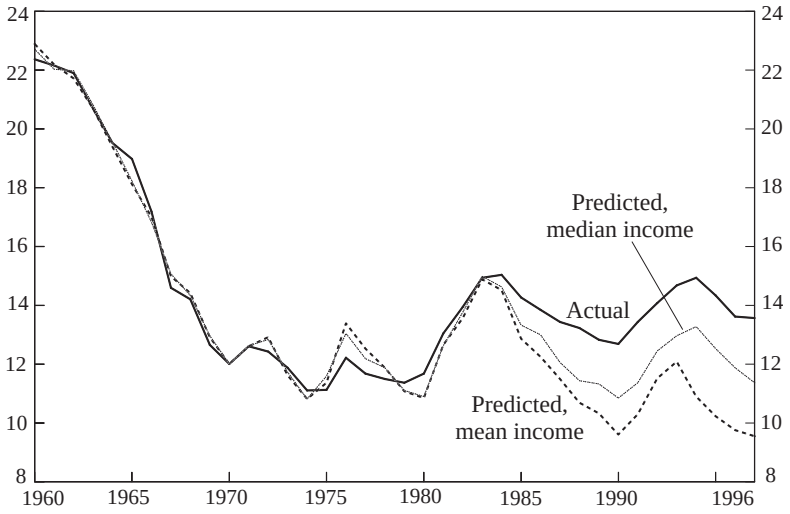
[6]Data for the Netherlands are for 1985, 1989, and 1994.

[7]Data for New Zealand are for 1984, 1990, and 1994.

[8]Data for Norway are for 1980, 1983, 1987, and 1991.

[9]Data for Sweden are for 1980, 1984, 1989, and 1993.

Chart 4
U.S. Actual and Predicted Poverty Rates, 1959-96



The macroeconomy and inequality

Tony Atkinson's final primary point is that the links between macroeconomic variables and the distribution of income are complex and merit further study. This raises the question of how far do measures of macroeconomic performance go to explaining rising inequality and a slowdown in reductions in poverty in many advanced nations over the past two decades.

The experience of the past few years of the United States of much lower unemployment, some evidence of a slowdown or modest reversal of growth in wage inequality, and rapid real wage growth for low-wage workers (Mishel, Bernstein, and Schmitt, 1998) is suggestive of the potential role of macroeconomic factors in inequality and poverty. But the rise in U.S. income inequality and persistence of overall and child poverty since 1983 is much greater than one would have predicted based on the historical relations between macroeconomic variables and poverty or income inequality using data up to 1983 (for example, Cutler and Katz, 1991). For example, Chart 4

plots the actual official U.S. poverty rate from 1959 to 1996 and compares it to predicted poverty rates using the macroeconomic relationship from 1959 to 1983 with mean (or median) family income, inflation, and the prime-age, married male unemployment rate used as explanatory variables. The benefits for the low-income families of the long recovery of 1983 to 1989 appear to have been much lower than predicted by the historical pattern, and by 1996 the poverty rate is 4 percentage points higher than would be predicted by standard macroeconomic variables alone. Thus structural changes in the labor market beyond those related to standard measures of macroeconomic performance have played an important role in rising inequality. Strong macroeconomic performance is a necessary condition for economic improvements for the disadvantaged. But tight labor markets need to be complemented with greater access to education for the disadvantaged, with workforce preparation strategies that better enable those without college degrees and from poor backgrounds to take advantage of emerging opportunities, and with policies to supplement the earnings and possibly subsidize the employment of the less skilled.

Endnotes

[1]But the variation in national experiences (for example, lower unemployment of the less skilled in "more rigid" West Germany and Norway than in "more flexible" Canada and Britain over much of the past two decades) appears more complicated than predicted by Krugman's (1994) well-publicized notion of a simple and inevitable tradeoff of unemployment and inequality (for example, Nickell, 1996).

[2]Hanratty and Blank (1992) have illustrated the possible importance of transfer policies in showing that Canada and the United States experienced similar increases in inequality and poverty using market (pre-transfer) incomes in the economic slowdown of the early 1980s, but Canada's much more generous social safety net implied much smaller increases in poverty and inequality of actual incomes.

[3]See Katz and Autor (1998) for a survey of this research.

[4]Nominal wages are converted into constant dollars using the chain-weighted personal consumption expenditures deflator of the national income accounts.

[5]Rapid increases in relative skill-demand associated with large-scale skill-biased technological change are not a new phenomenon and do not necessarily generate rising inequality. For example, Goldin and Katck (1995, 1998) show that capital-deepening, the diffusion of purchased electricity, and the introduction of continuous-process and batch

methods of production greatly increased the relative demand for nonproduction workers and more-educated production workers in manufacturing from 1909 to 1929, but that wage differentials by skill did not increase during this period. They find that the rapid increase in the supply of skills arising from the high school movement prevented wage inequality from rising in the face of what appears to be a skill-biased technological revolution.

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