Long-Term Inequality and Mobility

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Abstract:

This brief investigates the mobility and income situation of family heads and spouses who have low long-term incomes, where long-term refers to average family income over a 10-year period. The data show that most of those in the poorest one-fifth of the long-term income distribution during the 1996–2006 period spent all or nearly all of the period's years in the poorest fifth of the single-year income distribution, and those who escaped did not move far. Moreover, this situation has worsened over time, with the long-term poor more "stuck" at the bottom in the 1996-2006 period than they were in 1976–1986 and 1986–1996. At the same time, the real incomes of the long-term poorest fifth have not grown as fast as the incomes of those in higher fifths, both from year-to-year within a period and from one period to the next. While it is well known that income inequality has risen in the United States in terms of single-year incomes, this brief documents that limited mobility has led to an increase in the inequality of long-term incomes as well.

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While Occupy Wall Street and recent speeches by President Obama and the chair of his Council of Economic Advisers, Alan Krueger, have raised considerable controversy among commentators, most agree that the United States has a problem of low upward mobility for those at the bottom.[1] Isabel Sawhill (2012) synthesizes relevant research and related concerns in "Are We Headed Toward a Permanently Divided Society?" In this brief, I provide some new data documenting the problem of low upward mobility from the bottom. Although most of the recent discussion has referred to *inter*generational mobility (how well children do compared with their parents), the data provided below refer to up and down movements in family income within a 10-year period by working-age family heads and spouses, indicating, in a shorter time frame, the degree to which families better their economic prospects and/or hold onto their advantages. These findings are related to intergenerational mobility, however, because if the family circumstances in which children grow up help to determine their economic prospects as adults, then children who grow up in a consistently low-income family will have more limited future prospects than they would if their parents' incomes were higher during at least some of their childhood.

Inequality has increased substantially in the United States since the 1970s.[2] Some analysts argue that because U.S. mobility is so high we need not worry about rising inequality; that is, even though the rich are now much richer compared with the middle or the poor than they were 30 years ago, no one is poor or rich for long, so it all evens out over time. Similarly, short spells in poverty are a problem if they represent serious deprivation, but they are an even greater concern if those who are poor fail to escape poverty in two or five or 10 years. Put another way, the concern is not with single-year inequality but with long-term inequality, for example, the

[1] Scott Winship of the Brookings Institution has offered several critiques of the President's December 7, 2011 speech in Osawatomie, Kansas and Alan Krueger's January 12, 2012 presentation at the Center for American Progress as well as the mobility research by Miles Corak that Krueger featured. While arguing with the administration's view of middle-class insecurity, Winship says "America has an upward mobility problem" (Winship, January 17, 2012) and similarly, "For some, it may be tempting to focus policy solely on economic growth to the exclusion of addressing limited upward mobility in terms of rank. But keep in mind all those kids who are unlikely to grow up to be whatever they want. Economic growth alone cannot be expected to increase upward mobility out of the bottom" (Winship, February 9, 2012). Other participants in the discussion include Jared Bernstein (2012) and Miles Corak (2012).
[2] The most widely cited authoritative recent source on the rise in inequality is Congressional Budget Office (2011).

inequality across individuals' average income during, say, 10 years. When people's incomes change from one year to the next, these up and down moves should mitigate the inequality of any one year's income, making the long-term distribution more equal. And they do: the inequality of long-term income is lower than the inequality of single-year income. For example, the Gini coefficient—a widely used measure of inequality—of 10-year average post-government family income[3] for heads and spouses between the ages of 16 and 62 during the 10-year period from 1996 to 2006 was 0.28, while the Gini coefficient across these same individuals' single-year family incomes during the same 10 years averaged 0.33.[4] (Note that this post-government income measure includes cash transfers and food stamps along with market income and subtracts taxes.[5])

Even though long-term inequality is lower than single-year inequality, if single-year inequality is rising (as it has been in the United States in recent decades), then mobility (year-to-year income changes) would be required to *increase* in order to prevent a rise in long-term inequality. The fact is, long-term inequality has risen over the last 30 years, indicating that mobility has not increased enough to fully offset the rise in single-year inequality. Figure 1 displays Gini coefficients of single-year income and long-term income and documents their rise from one 10-year period to the next—from the period 1976–'86 to 1986–'96, and then to 1996–'06. (The table reports the data displayed in the figures and/or mentioned in the text.)

We can unpack the long-term inequality numbers to understand the mobility patterns they reflect. If we categorize all households by their long-term income quintile, that is, which fifth of

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[3] The income measure used here is post-tax, post-transfer income as published by Cornell University in their Cross-National Equivalent File, for families followed by the Panel Study of Income Dynamics.

[4] The Gini coefficient is zero if all incomes are equal and reaches 1.0 if one person receives all the income.

[5] See Bradbury (2011) for details about the sample and data. To eliminate top-and bottom-coding as well as the most serious data errors, each year's income data are trimmed to remove the top and bottom 1 percent. In each 10-year period, a cohort of family heads and spouses is followed, all of whom are between the ages of 16 and 62 (hence 16 to 52 in the first year of the period and 26 to 62 in the last year of the period) and are not missing information on family income in any of the observed years during the 10-year period. Limiting the sample to heads and spouses avoids including children's moves out of their parents' households as mobility. Constant within a period, the sample cohort changes from one period to the next. The only difference from Bradbury (2011) is that the current analysis is based on total post-government family income whereas the 2011 paper adjusts total post-government income for family size. With the exception noted in footnote 8 below, the patterns documented here for the poorest long-term quintile apply even when the adjustment is made.

the distribution of 10-year average incomes of everyone we can observe in each period they fall within, we can then look at whether most families' 10-year average incomes reflect many year-to-year moves smoothed out by averaging, or very few moves, with single-year income changing little from year to year.[6] For the poorest and richest families—those in the poorest or richest quintile of the long-term distribution—mobility is quite low. During the 1996–'06 period, one-half (51 percent) of poorest-quintile individuals were in the poorest quintile in all or all-but-one of the six single-year observations of their income; the corresponding figure for the long-term richest-quintile individuals was 54 percent.

Furthermore, those in the long-term poorest or richest quintile who were outside the corresponding single-year quintile in one or more years did not typically move far. Over three-quarters (78 percent) of the members of the long-term poorest quintile were inside the single-year poorest or adjacent second-poorest quintiles in all six observations during the 1996–'06 period, and 97 percent were in the poorest two quintiles for at least five of the six observations. For those in the richest long-term quintile, the corresponding figures were somewhat lower—69 percent and 93 percent. Thus, a miniscule 3 percent of the poorest long-term quintile saw incomes beyond the second-poorest quintile (above the 40th percentile) in more than one of the six years, and only 7 percent of the richest long-term quintile suffered below-60th-percentile income in more than one of the six years. Not surprisingly, this lack of mobility in relative (quintile) terms shows up in average income changes as well: Averaging the real income changes experienced by all heads and spouses in the poorest long-term quintile of the 1996–'06 period shows an average rise of 0.053 in log income (approximately 5.3 percent increase in real family income) between 1996 and 2006, while those in the richest 1996–'06 long-term quintile saw their single-year log incomes rise by an average of 0.276 (27.6 percent).

But wait, you say. By choosing the poorest quintile based on long-term income, the analysis is biased toward finding low mobility—it selects those who have had the least success in moving up from the bottom (or for the richest long-term quintile, those who have had the most success

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[6] Income data are collected by the Panel Study of Income Dynamics only every other year, so we are able to observe six single-year family incomes for each person during a 10-year period; for example, for the 1996–2006 period, we observe income in 1996, 1998, 2000, 2002, 2004, and 2006.

in staying at the top) and then measures their mobility. In fact, that is the point—how badly are those who are in the worst long-term situation doing? And similarly for the best-off.[7] The next paragraph asks how the situation of those who do worst (defined as those in the poorest long-term quintile) has changed over time.

Part of the reason that long-term inequality has increased is that these patterns of "stickiness" have worsened over time. Figure 2 reports immobility data like those discussed in the last two paragraphs for the richest and poorest long-term quintiles for three 10-year periods, 1976–'86, 1986–'96, and 1996–'06. Most of the immobility figures are higher in the most recent decade than they were 10 or 20 years earlier. If we look at the middle quintiles as well, the story is the same (Figure 3): While members of the middle three quintiles were considerably more likely to escape their long-term quintile in multiple single years during any period—indicated by the fact that the bars for middle quintiles are shorter than those for the rich and poor—they still trend up over time. The bottom line: Most of the long-term poor are stuck at the bottom, most of the long-term rich have a strong grip on the top, and each of these two groups is somewhat more entrenched than the corresponding groups 20 years earlier. Even those in the middle have become less likely to see a range of income positions during a 10-year period.

A similar time pattern emerges for income changes within a period, that is, between the first and last year of the period. Members of the poorest long-term quintile in the 1976–'86 period saw slower real growth in single-year income between 1976 and 1986 than members of the richest long-term quintile, but that gap was not as large for members of those long-term quintiles in 1976–'86 as it was 20 years later for the corresponding quintile members in the 1996–'06 period (see the left-hand panel of Figure 4). Overall income growth was slower in the earlier period than later, which might make such relative growth comparisons invalid over time. However, it is also the case that the fraction of the poorest long-term quintile enjoying income growth faster than the overall average was lower in 1996–'06 than in 1976–'86, and the gap between that fraction and the percentage of richest-quintile members enjoying above-average

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[7] Indeed, the focus on long-term quintile status is what makes the data in this brief "new". Most earlier research on mobility, mine included, examines the movements from the beginning to the end of a 10-year (or other length) period for individuals who *begin* the period in a specific single-year quintile.

growth widened from 1976–'86 to 1986–'96 (from 7 percentage points to 10 percentage points) and widened again (to 16 percentage points) from 1986–'96 to 1996–'06 (right-hand panel in Figure 4). In all three periods, more than half (53 to 59 percent) of the members of the richest long-term quintile saw their incomes grow faster than average during the period, and less than half (43 to 47 percent) of poorest-quintile members experienced above-average income growth.

Not only are they somewhat less likely to move far afield from year to year in the relative (quintile) sense, but the rich and poor have moved markedly further apart in income levels, as rising inequality implies. As discussed above, this fact is well known in the cross-section of single-year incomes and it is true even in terms of 10-year-average income. The median income of the poorest quintile (that is, the 10th percentile) of long-term income was $25,600 for those in that quintile in the 1976-86 period and had fallen to $24,500 during the 1996–'06 period;[8] the highest income in the poorest long-term quintile (20th percentile) rose from $32,200 to $34,200. Note that these figures refer to a single group of individuals within each period, but different cohorts across periods; the dollar figures are expressed in inflation-adjusted 2006 dollars. Meanwhile, the median income of the richest long-term quintile (90th percentile) rose from $76,200 in the 1976–'86 period to $105,000 in the 1996–'06 period, and the lowest income in the richest long-term quintile (80th percentile) increased from $66,200 to $84,700. Thus, the ratio of median richest-quintile income to median poorest-quintile income climbed from 3.0 in 1976–'86 to 4.3 in 1996–'06 and the ratio of income of the poorest member of the richest long-term quintile to that of the richest member of the poorest long-term quintile increased from 2.1 to 2.5 (Figure 5); these data document in dollar terms the same rise in inequality measured by the Gini coefficient in Figure 1.

Of course, there will always be a poorest long-term quintile; that is the nature of relative rankings. These data, however, indicate that the poorest long-term quintile's situation has worsened compared with 20 years earlier, in the sense that they have become more isolated

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[8] Because family sizes have generally fallen over the last several decades, when incomes are adjusted for family size, the poorest long-term quintile saw its median (family-size-adjusted, long-term) income rise slightly, rather than fall slightly as the unadjusted measure did. But in either case, the poorest long-term quintile fell further behind the richest.

(less relative movement from year to year) as well as poorer in terms of real income and income growth. That is, members of the poorest long-term quintile became less likely to spend more than a year in a quintile above the poorest, and those that did enjoy temporary escapes typically moved less far compared with 10 or 20 years earlier. At the same time, the poorest quintile's median long-term income had fallen further below that of richer long-term quintiles and their income growth within the 1996–'06 period lagged further behind the growth experienced by richer quintiles than was the case in 1976–'86 or 1986–'96.

By the latest period we can observe (1996–'06), these changes have left those with the lowest long-term (10-year average) income in a troubling situation: Half of them spent either no years or only one-sixth of the years in a quintile of the single-year distribution higher than the poorest. Those who escaped typically didn't go far, as three-quarters spent every year in the poorest or second-poorest quintile and fully 97 percent spent at most one-sixth of single years outside the poorest or second poorest quintile. Their median long-term income in the period was less than half the overall long-term period median and less than one-quarter of the median long-term income of the richest quintile in that period. And within the period, their single-year incomes grew much more slowly, on average, between 1996 and 2006, than the incomes of members of the other long-term quintiles.

Although these data are purely descriptive, reduced movement by the poorest heads and spouses and relatively stagnant real income levels strongly suggest limited individual opportunity and, further, that low-income parents are less able to raise their children's prospects, even over a 10-year time span. While we would like to understand better what has caused this deterioration, policymakers concerned about equal opportunity will want to investigate strategies to loosen the tight connection between single-year and long-term income at the bottom.

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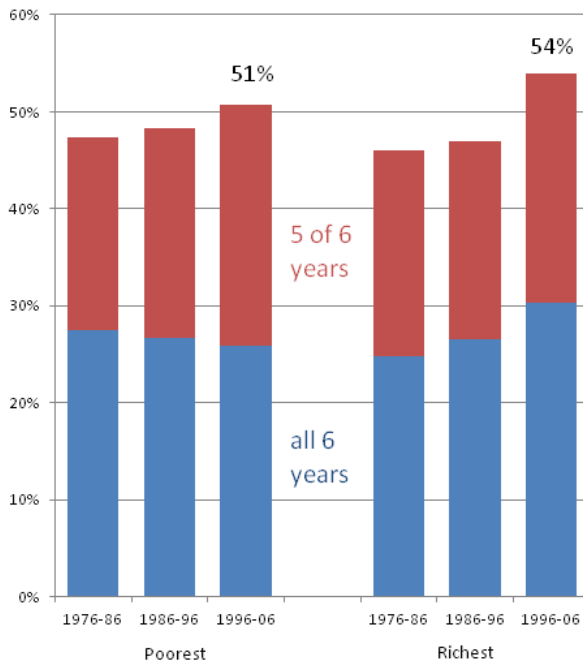
Figure 1

### Income inequality, single-year income and long-term income
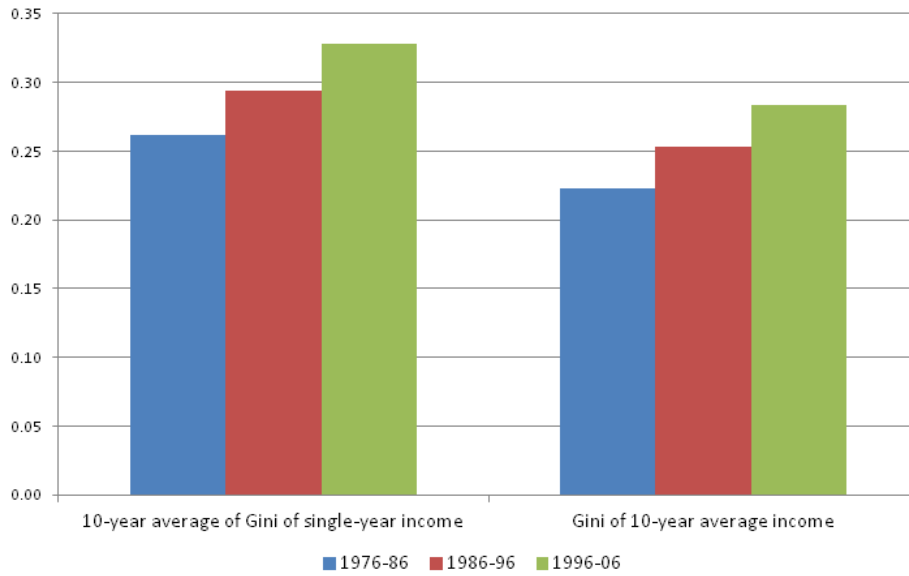
Source: Author's calculations based on data from Panel Study of Income Dynamics (PSID) and Cornell University Cross-National Equivalent File (CNEF).

Figure 2

Percent of people in poorest or richest long-term quintile who spend 5 years or 6 years in that single-year quintile
(out of 6 observed single years in 10-year period)

Percent of people in poorest or richest long-term quintile who spend 5 years or 6 years in that or adjacent single-year quintile
(out of 6 observed single years in 10-year period)
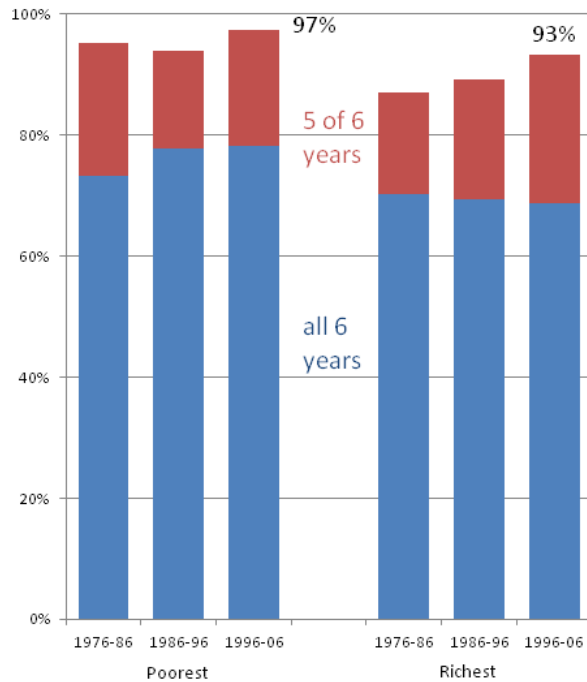
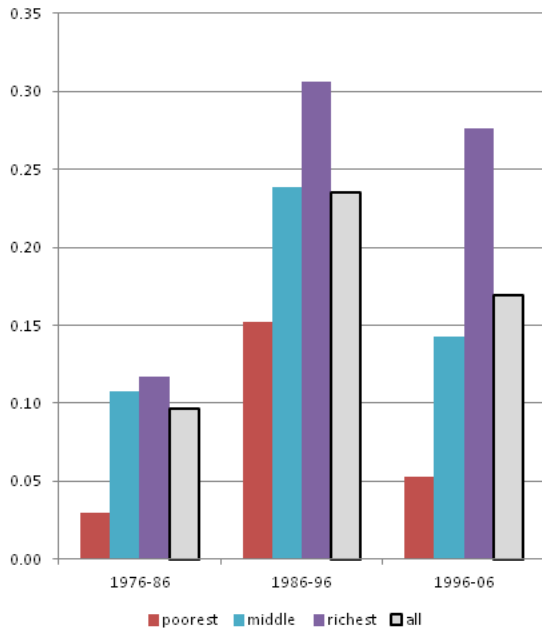Source: Author's calculations based on PSID and CNEF.

Figure 3

Percentage of people in each long-term quintile who spend 5 or 6 years in same single-year quintile
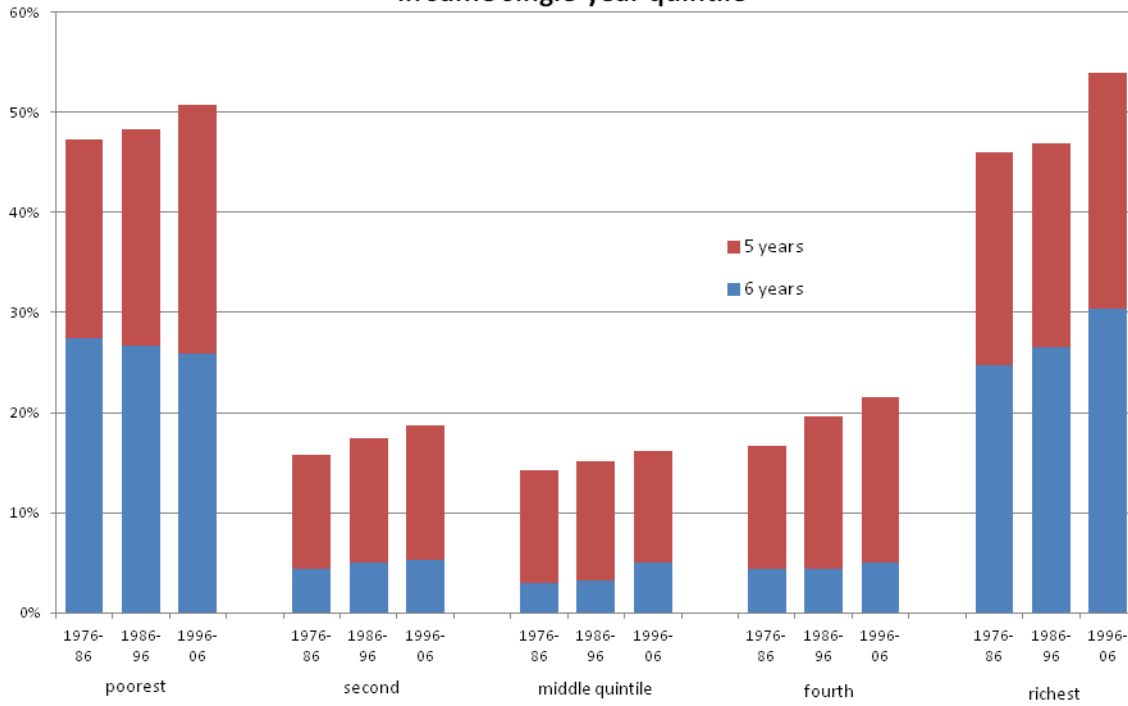
Source: Author's calculations based on PSID and CNEF.

Figure 4

Average change in log income from first to last year of period by long-term quintile and overall

Percentage of members of long-term quintile experiencing income growth in period greater than overall period average
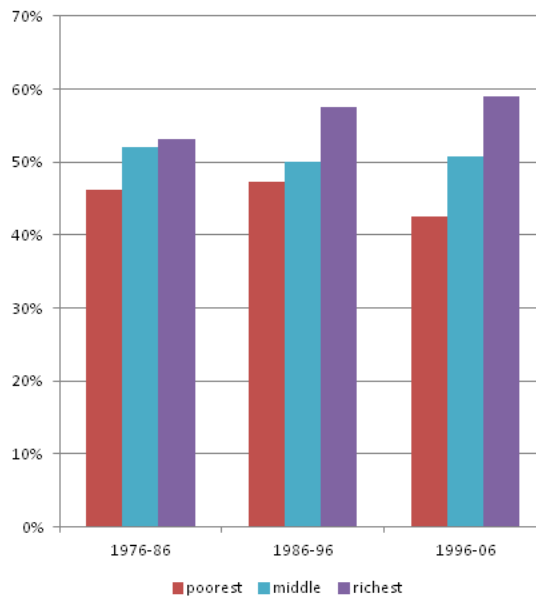
Source: Author's calculations based on PSID and CNEF.

Figure 5

Rich-poor distance measured with percentile ratios, long-term income

Source: Author's calculations based on PSID and CNEF.

Table. Summary data on long-term inequality and mobility

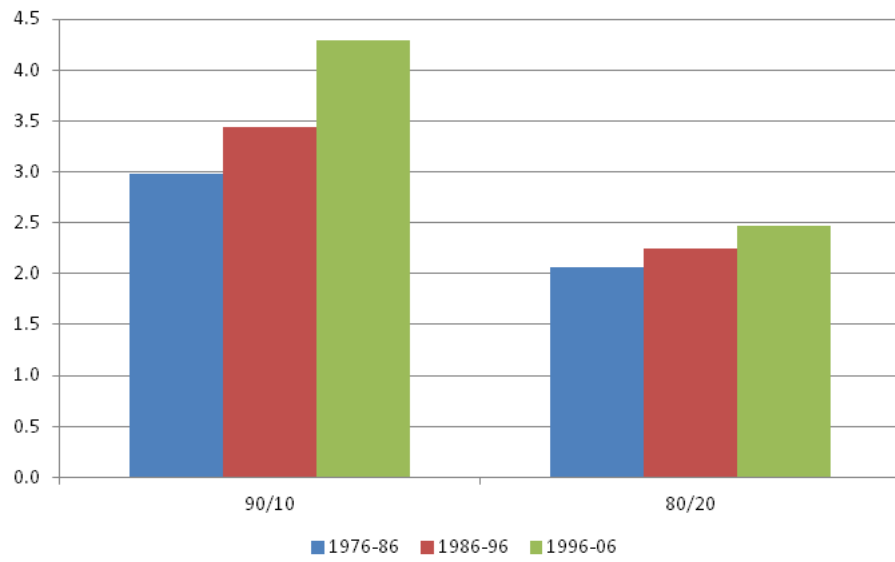|	Period					Period		
	1976-86	1986-96	1996-06			1976-86	1986-96	1996-06
Gini Inequality					**Gini Inequality**			
Gini of 10-year average income	0.223	0.254	0.284		10-year average of Gini of single-year	0.262	0.294	0.328
Fraction of members of long-term quintile who spend x years in same single-year quintile					**Fraction of members of long-term quintile who spend x years in same or adjacent single-year quintile**			
Poorest quintile					*Poorest quintile*			
all 6 years	0.274	0.267	0.259		all 6 years	0.731	0.778	0.781
5 out of 6 years	0.199	0.216	0.249		5 out of 6 years	0.220	0.161	0.192
Second poorest quintile					*Second poorest quintile*			
all 6 years	0.044	0.051	0.052		all 6 years	0.617	0.621	0.638
5 out of 6 years	0.113	0.124	0.135		5 out of 6 years	0.287	0.299	0.272
Middle quintile					*Middle quintile*			
all 6 years	0.030	0.033	0.050		all 6 years	0.617	0.591	0.663
5 out of 6 years	0.113	0.119	0.112		5 out of 6 years	0.231	0.246	0.175
2nd richest quintile					*2nd richest quintile*			
all 6 years	0.043	0.044	0.050		all 6 years	0.632	0.657	0.645
5 out of 6 years	0.124	0.152	0.165		5 out of 6 years	0.218	0.263	0.214
Richest quintile					*Richest quintile*			
all 6 years	0.248	0.265	0.304		all 6 years	0.702	0.693	0.687
5 out of 6 years	0.212	0.205	0.235		5 out of 6 years	0.167	0.198	0.246
Average change in log income of long-term quintile members from first to last year of period					**Fraction of long-term quintile members experiencing income growth in period greater than overall period average**			
All	0.097	0.235	0.169					
Poorest quintile	0.030	0.152	0.053		Poorest quintile	0.463	0.472	0.426
2nd poorest quintile	0.090	0.207	0.143		2nd poorest quintile	0.483	0.476	0.462
Middle quintile	0.108	0.239	0.143		Middle quintile	0.521	0.501	0.507
2nd richest quintile	0.140	0.270	0.230		2nd richest quintile	0.557	0.544	0.524
Richest quintile	0.117	0.307	0.276		Richest quintile	0.532	0.576	0.590
Percentiles of long-term income distribution					**10-year average of percentiles of single-year income distribution**			
10th	25,561	25,804	24,490		10th	21,328	21,091	20,390
20th	32,167	33,420	34,211		20th	29,484	29,924	30,116
30th	37,997	40,270	41,899		30th	36,041	37,544	38,110
40th	43,304	46,090	49,093		40th	41,918	44,389	46,363
50th - median	48,028	52,847	55,901		50th - median	47,139	51,755	55,193
60th	52,756	59,523	63,883		60th	52,687	59,045	63,737
70th	59,182	66,379	72,212		70th	59,478	66,959	73,480
80th	66,179	75,045	84,656		80th	68,197	77,273	86,725
90th	76,198	88,584	104,950		90th	81,427	94,594	109,477
Percentile ratios of long-term income distribution					**Percentile ratios of single-year income distribution**			
90th/10th	2.98	3.43	4.29		90th/10th	3.82	4.48	5.37
80th/ 20th	2.06	2.25	2.47		80th/ 20th	2.31	2.58	2.88

Source: Author's calculations based on data from Panel Study of Income Dynamics and Cornell University Cross-National Equivalent File