

Has Widening Inequality Promoted or Retarded U.S. Growth?

by

GARY BURTLESS*
THE BROOKINGS INSTITUTION
WASHINGTON, DC

April 22, 2002

Copyright © 2001 Gary Burtless

* This paper is based on a speech prepared for a conference of the Institut de Recherche en Politiques Publiques and the Centre for the Study of Living Standards on "The Linkages between Economic Growth and Inequality," January 26-27, 2001, Château Laurier, Ottawa. The views are solely those of the author and do not reflect those of the Brookings Institution, IRPP, or CSLS.

Has Widening Inequality Promoted or Retarded U.S. Growth?

by
Gary Burtless

A B S T R A C T

The United States has recently enjoyed faster economic growth than any other large industrialized country. The U.S. also has the highest level of inequality among the G-7 countries and has seen inequality increase faster than most other industrialized nations. The combination of rapid American economic growth and high and rising U.S. inequality raises a question: Has rising inequality contributed to rapid U.S. economic growth? This paper reviews modern theories linking inequality and economic growth and concludes that a relatively old theory suggested by Arthur Okun probably accounts for the recent combination of U.S. growth and inequality. The country imposes fewer restrictions on economic agents and provides less help to people in distress. It makes fewer sacrifices in efficiency to achieve economic equality. Okun's theory has little difficulty explaining why these distinctive policies are associated with faster employment growth and higher average hours of work than are observed in other wealthy countries.

Has Widening Inequality Promoted or Retarded U.S. Growth?

Over the past decade the United States has enjoyed faster economic growth than any other large industrialized country. This is true whether economic growth is measured using the change in total output of goods and services or the change in output per person (see Table 1). The United States also has more inequality than any other large industrialized economy. This was true as far back as the 1970s, but inequality has risen faster in the United States than it has in most other rich countries (see Gottschalk and Smeeding, 1999). The combination of comparatively rapid American economic growth and high and rising American inequality raises a question: Has inequality contributed to U.S. economic growth? Or is the growth performance of the United States essentially unrelated to its large and growing income disparities?

Table 1. Economic Growth in G-7 Countries, 1990-2000

Country	GDP growth (% per year)	Growth of GDP per capita (% per year)
Canada	2.7	1.6
France	1.8	1.4
Germany ^{a/}	1.5	1.3
Italy	1.6	1.7
Japan	1.4	1.1
United Kingdom	2.2	2.0
United States	3.3	2.3

^{a/} 1991-2000 for unified Germany.

Sources: IMF World Economic Outlook database, May 2001.

This survey of the recent U.S. experience is divided into three main sections. I begin by describing several theories that attempt to explain the relationship between inequality and economic growth. Next I argue that only one of these theories sheds much light on the recent U.S. experience. And none of the theories offers an explanation for two of the main trends that have contributed to the three-decade rise in American inequality. In particular, the trend toward smaller and more economically unequal families is not one that has been addressed by the main theories connecting

economic growth and the trend in economic inequality. Nor do the theories account for the increasing correlation between the earned incomes of husbands and wives, a trend that has significantly boosted U.S. inequality since the late 1970s.

The last section considers the post-war relationship between per capita income growth and inequality in the largest industrial economies. Since World War II, the periods of fastest growth in the United States have also been ones in which inequality fell or rose only modestly. Periods of slow growth have seen the fastest increases in inequality. Unfortunately, this relationship is only informative about the impact of recessions on U.S. inequality. It does not help us understand the long-term effect of growth on inequality or of inequality on growth. When I compare the recent relationship between inequality and growth among the G-7 countries, the results are more suggestive. The G-7 countries with the fastest increases in GDP per capita -- the United States and the United Kingdom -- are also the countries that experienced the fastest growth in inequality. Canada, France, Germany, and Italy have experienced slower growth and seen a smaller rise in inequality.

Although the cross-national comparison does not provide conclusive evidence about the relationship between inequality and growth, it is consistent with the view that the rapid rise in U.S. inequality has contributed to the relatively good performance of American output and employment since the late 1970s. It is not clear that the sterling performance of U.S. output growth has been as helpful for the median American, however. Because so much of the growth in total income has been enjoyed by a small fraction of high-income families, middle- and low-income Americans have enjoyed more modest income gains than those enjoyed by middle- and low-income residents in some other rich countries. Thus, one's assessment of U.S. economic performance depends crucially on the point in the income distribution where the assessment is made. Americans with a low rank in the income distribution saw much slower improvements in their standards of living than low-income residents in several of the other G-7 countries. Americans with a high rank in the distribution enjoyed more robust income gains than they would have enjoyed at the same income rank elsewhere in the G-7. Observers

who place heavy emphasis on improving the situation of a nation's poor and middle class citizens would not give high marks to recent American performance.

I. Recent theories

The literature on growth and economic performance, on the one hand, and inequality, on the other, was not especially large a decade ago. It has grown tremendously in the past half dozen years. The literature has three major strands.

The oldest one is associated with a hypothesis advanced by Nobel-prize-winning economist, Simon Kuznets (Kuznets, 1955). Kuznets' model was based on an empirical observation about the trend in inequality over very long periods of time. When the difference in incomes between the traditional and modern sectors is bigger than the differences within sectors, economic growth can push up inequality before ultimately causing it to fall. Early in the process of economic development, as the modern sector grows and the traditional sector shrinks, inequality increases because of the big income gap between workers in the modern and traditional sectors. Eventually income differences begin to decline when most of the workforce is in the modern sector, where the disparities in income are smaller. Even though Kuznets' theory was partly developed using information on Britain, Germany, and the United States, it is really a theory about economic development rather than of changes in the income distribution in countries that are already rich. His theory seems relevant in present-day China and India, but not in post-war Canada or the United States.

A second leading theory of economic performance and inequality was described by Arthur Okun. His 1975 book, *Equality and Efficiency: The Big Tradeoff*, highlighted the efficiency sacrifices that countries make when they establish regulatory schemes or income distribution programs to assure equity in the final distribution of income (Okun, 1975). Okun did not offer an explicit model of how inequality will change as the economy grows. Instead, he described the efficiency penalties that are incurred when the government interferes with market-determined prices and incomes -- that is, with the prices and incomes that would emerge from unfettered competition.

Most of the public finance literature over the last quarter century, at least in the United States, has focussed on measuring the exact size of the efficiency loss arising from particular government programs or from the taxes needed to finance these programs. One finding of this literature was anticipated by Okun back in 1975. The efficiency cost of income redistribution and economic regulations, such as the minimum wage, can sometimes be large. It follows that a policy regime with more redistribution -- and less inequality -- may generate less national income than a regime where redistribution is lower.

Unlike Kuznets' theory, Okun's theory is relevant for understanding economic performance and inequality in the developed countries. Almost all citizens in rich countries are already in the modern economy. Okun's basic idea can be examined by comparing the same country at two points in time, before and after enactment or repeal of some regulatory or income distribution scheme. It can also be used to compare two countries, one with and the other without significant government regulation or redistribution. I shall return to these points later on.

A third set of theories links a country's level of income inequality with the political measures taken to reduce inequality and the social consequences that follow when income disparities grow unchecked. These theories are sometimes referred to as "political economy" models of growth and inequality. The basic idea is that inequality can have important consequences for growth, because the degree of inequality in a society can affect the policy measures it adopts and the willingness or ability of citizens to undertake measures that contribute to growth.¹ Some economists suggest, for example, that large income gaps can indirectly slow growth by encouraging the median voter to favor excessive taxes on productive activities. Alternatively, a very unequal income distribution might induce social unrest, which in turn discourages productive investments. Finally, a very unequal distribution might reduce the percentage of the population that can make worthwhile investments in its own education and training, thus depressing economic growth.

¹ For good surveys, see Ferreira (1999) and Aghion, Caroli, and Garcia-Penalosa (1999).

All of these theories are interesting. They probably account for part of the long-term trends in all countries, and they explain some of the differences among today's developing countries.

I am a student of income distribution changes in the United States, however. From that perspective, the third class of theories is no more helpful than Kuznets' theory for understanding trends of the past two decades. One or more of the new theories may eventually be useful in explaining long-term U.S. trends, either in the past or in the future. But none of them takes us very far in accounting for the steep rise in U.S. inequality that occurred after 1979. Nor do they explain the political reaction to increased American inequality. I do not see how they convincingly account for the connection between inequality and U.S. growth observed over the past two decades.

American inequality rose sharply after 1979 (see Chart 1). It rose both along the dimension of family or household income (top panel) and along the dimension of workers' earnings (bottom panel). Although the rise in income disparities slowed after 1993, the level of money income inequality was as high at the end of the 1990s as at any time since the end of the Great Depression.

The shock of greater inequality did not appear to produce any more social unrest, however. On the contrary, the peak of post-war political and social unrest probably occurred at the end of the 1960s and in the early 1970s, after a long trend toward *lower* inequality. Both violent and property crime have fallen dramatically over the 1990s compared with levels observed in the late 1960s and early 1970s, when U.S. income inequality was much lower.² American political opinion did not move in the direction of favoring more government intervention, more confiscatory taxes, or more redistributive transfer programs after 1979. On the whole, political sentiment moved modestly in the opposite direction. To be sure, the surge in U.S. inequality might eventually produce more social unrest, more government intervention, and lower investment in education, skills, and training on the part of the low-income Americans. But these effects have not

² The drop in crime rates is evident both in the number of crimes reported to the police and in surveys that ask whether respondents have recently been victims of property or violent crimes. See Federal Bureau of Investigation (2000) and Rennison (2001).

materialized in the past two decades. In sum, the two-decade surge in U.S. inequality has not yet produced the adverse impacts on growth predicted by some of the new political economy models. Of course, at some future time the predicted adverse consequences may begin to appear.

II. The post-war relation between growth and inequality

Even a cursory glance at Chart 1 suggests that rising U.S. income inequality was linked in a crucial way to increased wage inequality. The two trends are suspiciously similar, especially in their timing.

Wider pay disparities certainly contributed to the surge in overall income inequality. It turns out, however, that the rise in wage inequality mechanically "explains" only about one-third of the increase in income disparities. If wage inequality had remained constant after 1979 rather than growing about 25 percent, the Gini coefficient of equivalent income would still have increased about two-thirds as much as it did.³ Stated another way, two-thirds of the jump in American income inequality was mechanically caused by some set of factors besides the jump in earnings disparities.

Table 2 decomposes the change in the Gini coefficient of income inequality between 1979-1996 into four components, plus a residual. Without going into the exact calculations that lie behind this decomposition, let me just say that they are extremely simple in principle.⁴ The basic idea is to transform the income data in the second year so that it conforms in some way to the observed distribution in the first year. Then I

³ "Equivalent income" is a concept widely used by social scientists to measure each person's income in an even-handed way. The analyst adjusts a family's gross or net income to reflect differences in the number of family members, under the plausible assumption that a family with more members requires more income to attain the same living standard as a family with fewer members. The assumption I have used to calculate equivalent income is that unadjusted family income must rise as fast as the square root of the number of family members for the family's equivalent income to remain unchanged. This implies, for example, that a family with four members requires twice as much money as a person living alone to attain the same living standard.

⁴ The calculations are explained in full in Burtless (1999a). The change in the Gini coefficient can be mathematically decomposed in a variety of ways. An alternative method to the one used in Burtless (1999) is the method proposed by Lerman and Yitzhaki (1985). When this alternative method is applied, results very similar to those shown in Chart 2 are obtained. See Karoly and Burtless (1995) and Burtless (1998).

recalculate the amount of inequality in the second year and determine the difference between this hypothetical inequality level and the actual inequality that was observed in the second year. To figure out the effect of increased male earnings inequality, for example, I simply recalibrated male wage inequality in 1996 so that it is identical to male inequality in 1979. Then I re-calculated the 1996 level of income inequality under that alternative assumption. These intricate calculations show that the jump in American inequality between 1979-1996 (when almost all the increase occurred) is mechanically "explained" in the following way (Table 2).

Table 2. Sources of Change in U.S. Personal Income Inequality, 1979-1996

<i>Source of change</i>	<i>Percent explained ^{a/}</i>
Increased male earnings inequality	28
Increased female earnings inequality	5
<i>Total: Increased earnings inequality</i>	33
Higher correlation of husband and wife earnings	13
Declining percentage of Americans in husband-wife families	21
Other	33

^{a/} Percentage of change in Gini coefficient explained.

Source: Author's calculations based on data in Burtless (1999a), p. 862.

This decomposition suggests that one-third of the jump in overall income inequality is attributable to higher earnings inequality, about one-seventh to the rising correlation of husbands' and wives' earned incomes, and slightly more than one-fifth to the increased "atomization" of American families. More Americans live in families headed by a single person, and fewer live in families headed by a married couple. About one-third of the increase in the Gini coefficient of U.S. personal income is due to a variety of miscellaneous factors, including the increase in unearned income flows that go primarily to people with a comparatively high rank in the income distribution (mainly interest and dividend payments and pensions from employer-sponsored retirement plans) and a slight decline in the redistributive impact of government transfer programs.

I do not claim that these factors "explain" increased inequality in any deep sense. Table 2 merely illustrates the point that a mathematical decomposition of the change in the U.S. Gini coefficient shows that observed shifts in specific background factors produced the observed increase in income inequality. There are straightforward explanations for some of the background trends, but explanations for other trends remain a matter of heated debate. In fact, a large part of the labor economics profession has spent more than a decade trying to explain the jump in American wage inequality. One thing seems clear, however. None of the inequality-and-growth theories is very informative about two of the main background trends that are producing higher U.S. inequality.

Set aside for a moment the increase in earned income inequality. What lies behind the increased correlation of husband and wife earned income? What explains the atomization of American families? These two factors in combination account for more than a third of the increase in U.S. inequality, slightly more than the fraction explained by higher earnings inequality.

The trend behind the increase in the husband-wife earnings correlation is simple to describe. Men and women who are married have always shared many characteristics that make their *potential* earnings similar. Marriage partners typically have similar educational attainment, for example. In the past, women who were married to highly educated (and highly compensated) men were less likely to work outside the home than women married to less educated (and less well compensated) men. The post-1960 surge in women's employment occurred first among middle class and then among affluent women. When women's actual earnings came closer to their potential earnings, the resulting jump in wives' earned income was much larger in percentage terms among the wives married to well-educated and highly compensated husbands. The correlation of husband and wife earnings therefore increased, boosting income inequality (Burtless, 1999a). I cannot think of a single theory linking economic growth to inequality that has made this connection.

Almost all rich countries show a long term pattern of rising women's employment outside the home and family farm or business. This pattern both contributes to

economic growth and is one of the most important by-products of growth. The economic role of men and women is much more equal in the world's richest societies than it is in the poorest, which suggests that economic growth has contributed to the redefinition of women's role in the economy. If assortative marriage behavior creates a strong association between the earnings potential of husbands and wives, then the move of married women into the workforce and the gradual elimination of employment discrimination against women can produce growing disparities between the incomes of affluent dual-income families and the poor. Inequality will rise.

The atomization of U.S. families has been widely discussed and intensely debated. None of the debate has focussed on the role of household atomization in producing a major link between inequality and economic growth, however. The process of atomization is quite likely to produce more inequality. A family containing more than one potential earner has the equivalent of an insurance policy to offset the variability of the principal earner's wages. A family with only a single potential earner lacks that insurance. The result is that income (and equivalent income) is more equally distributed among married-couple families than it is in one-adult families. Presumably, families with three or four potential earners would have even better insurance than married-couple families. This may be one reason that extended families containing more than two adults are a common household arrangement in developing countries.

If a family splits up, one by-product is an increase the variance of the equivalent incomes of the resulting family units. According to the official U.S. poverty guidelines, it takes 56 percent more money to support two people living apart than it does to support the same two people if they live together. Unless actual income increases substantially at the same time a family splits up, atomization reduces the equivalent income of the typical family member. The atomization of American families – holding actual incomes constant – thus reduces the average person's equivalent income and increases the variance of equivalent income. Holding actual incomes constant, atomization increases both the poverty rate and the Gini coefficient.

I suspect the atomization of families is partly a result of rising incomes – that is, of economic growth. As Americans' affluence and security grew, they had less reason

to put up with the disagreeable habits of an irritating partner. Put another way, living alone, like bowling alone, is a superior good – one whose consumption increases with improvements in general living standards. Whatever the reason for household atomization, it has had a profound impact on the way individuals share their income with one another. The percentage of Americans who live in married-couple families is sinking steadily. Between 1980 and 1997 it shrank from 75 percent to less than 65 percent of the population.

None of the inequality-and-growth theories sheds much light on these phenomena. Research by Lynn Karoly and me suggests that the rising correlation of husband-wife earnings and the atomization of U.S. families are trends that were underway as far back as the early 1960s, during an era when overall inequality was falling and average incomes were rising as fast as at any time in the post-war period (Karoly and Burtless, 1995). In other words, two of the main sources of increased American income inequality date back at least four decades and have persisted regardless of the trend in wage inequality or unearned income inequality.

These important trends have not been the subject of any of the old or new literature on the relationship between inequality and economic growth. The trends are not traceable to any of the mechanisms spelled out by Kuznets, Okun, or the new political economy theorists. Instead, they are caused by long-term shifts in social norms that are in turn linked to economic growth. Neither the old nor the new theories of inequality and growth account for one of the most important determinants of income inequality, namely, the sorting process that produces groups of individuals in the population who live together, share economies of scale in housing, and divide evenly the economic resources over which they have control.

III. Inequality, efficiency, and the rise in income disparities

Of the three kinds of theories mentioned earlier, the one proposed by Arthur Okun sheds the most light on recent trends in American growth and inequality. As just noted, Okun's theory is silent about some of the most important recent U.S. trends, but

it does help account for recent differences in inequality and growth among the rich countries.

The post-war relationship between family income inequality and U.S. growth is displayed in Chart 2. The trend in income inequality has already been shown in the top panel of Chart 1. In order to estimate a consistent series on the change in family income inequality, I have adjusted the U.S. Census Bureau's estimates of the Gini coefficient after 1992.⁵ To estimate the rate of change in real U.S. income, I have used the U.S. Commerce Department's latest estimates of per capita GDP to calculate growth rates over the post-war period. (The estimates were published on 21 December 2000.) These two statistical series can be combined to show the relationship between growth and inequality during the post-war period.

Each point in Chart 2 represents the combination of inequality change and average income change over a particular half-decade period. Points in the upper left, for example, represent the unwholesome combination of slow income growth and rapid growth in inequality. The 1979-84 and 1989-94 periods fall in this unhappy quadrant. Points in the lower right reflect the felicitous combination of fast income growth and steep declines in inequality. The half decade from 1964 to 1969 was the most recent period in which the United States enjoyed this combination.

To aid interpretation of the chart, I have performed a simple regression of inequality change on income change. The resulting regression line is displayed in the chart. The regression coefficient suggests that, on average, faster income growth is associated with declining inequality, precisely the association implied by many of the new political economy models of growth and inequality. In my view, however, the correlation does not provide convincing support for the new theories. The negative relationship between inequality change and growth is largely driven by the well-known effect of the business cycle on overall inequality. Recessions tend to depress the

⁵ The 1993-1999 estimates of inequality were affected by a change in the way the Census Bureau asked about family income starting in March 1994. Although actual inequality certainly increased between 1992 and 1993, the new Census methods caused the official statistics to overstate the amount of the increase.

income share of Americans in the bottom part of the distribution; rapid expansions tend to increase their share (or at least slow its long-term decline).

We can eliminate the impact of business cycles by comparing growth and inequality trends over long cycles, where the start and end dates of the periods are equivalent points in the business cycle. Chart 3 shows the combinations of income growth and Gini coefficient change over decade-long periods in the post-war era. Unfortunately, the chart contains only five points, so it is a bit difficult to draw powerful inferences about the long-term relationship between U.S. growth and inequality. One might argue that Chart 3 shows the same relation between income growth and change in inequality displayed in Chart 2: Faster growth reduces inequality. This conclusion depends, however, on a single observation -- the growth-inequality combination observed in the 1960s. The other four points in the chart suggest that 2-percent-per-year average income growth is consistent with a wide variety of trends in inequality, ranging from a 0.3-percent-per-year decline in the Gini to 1-percent-per-year increase. A simpler interpretation of Chart 3 is that U.S. inequality fell until 1969 and then rose in every decade after that. This means that the post-war time series evidence about the United States alone is not very informative.

Evidence from the G-7 countries is more interesting. The top panel in Chart 4 shows the 1980-2000 growth rates of GDP per capita in the G-7 countries. Japan and the United States rank at the top, with growth averaging a bit faster than 2 percent a year. In the case of the United States, growth rates were similar in the past two decades (see Chart 3). In Japan, growth was much slower in the 1990s than the 1980s (see Table 1). The bottom panel of Chart 4 shows the rate of change in the Gini coefficient of equivalent personal income in the G-7 countries over the period from 1979 to the mid-1990s. These estimates were derived based on consistent measures of income and income equality using comparable micro-census files for each of the countries (Gottshalk and Smeeding, 1999).

It may only be coincidence, but the three countries with the fastest average income growth also had the largest jumps in inequality. Interestingly, France was the only G-7 country that experienced no change in inequality over the past two decades.

Its growth rate falls near the bottom of the ranks of G-7 countries. Canada experienced almost no change in income inequality, and it enjoyed the slowest average income growth of the G-7 countries.

An important dimension of growing inequality is the increase in wage disparities. The cross-national evidence on earnings inequality is harder to interpret than the evidence on income inequality, however. This is mainly because researchers analyzing different countries have calculated the trend in wage inequality using varying methods and differing estimation samples. For example, analysts have looked at wage

Table 3. Growth in Per Capita Income and Growth in Inequality among G-7 Countries, 1980-2000

Country rank

Country	Per capita GDP growth		Change in inequality	
	1980-2000 <u>a/</u>	1990-2000 <u>b/</u>	Personal income <u>c/</u>	Male earnings <u>d/</u>
	(1)	(2)	(3)	(4)
Japan	1	7	3	4
USA	2	1	2	2
UK	3	2	1	1
Italy	4	3	6	7
Germany	5	6	4	6
France	6	5	7	5
Canada	7	4	5	3

a/ Growth in real output per capita, 1980-2000. For Germany, rate for West Germany 1980-1991 combined with rate for unified Germany 1991-2000.

b/ Growth in real output per capita, 1990-2000. For Germany, 1991-2000.

c/ Annual rate of change in Gini coefficient of disposable income, 1979-mid 1990s (LIS).

d/ Annual rate of change in ratio of 9th decile wage to 1st decile wage, 1979-1989 (OECD, 1996).

Sources: Author's tabulations of data from OECD (1996), IMF World Economic Outlook database (April 2001), LIS "Key variables" data bank, and Gottschalk and Smeeding (1999), and Atkinson, Brandolini, and Smeeding (2000).

developments in different cross sections of the population (all wage earners, all workers, full-time workers, male workers between 25 and 54, and so on). Some researchers have focussed on the trend in wage differentials between educational groups rather than in the overall population. The OECD's 1996 *Employment Outlook*

presents estimates of the trend in earnings inequality for the largest sample of countries based on the application of comparable data methods (OECD, 1996, pp. 60-65).

In the fourth column of Table 3, I show the rank order of the G-7 countries in terms of wage inequality growth. Wage inequality is measured as the percentage increase in the ratio of the ninth decile wage to the first decile wage, where the sample of included workers consists of male wage and salary earners.⁶ The United Kingdom, the United States, and Canada rank highest in the growth of male earnings inequality; Italy, Germany, and France saw the smallest change in wage inequality.

An anomaly in this list is the rank of Canada. While Canadian wage inequality rose almost as fast as wage inequality in the United States, Canada experienced very little change in overall income inequality through the middle of the 1990s.⁷ The reason for the divergence between income and wage inequality trends was a substantial improvement in income-tested benefits for low-income Canadian families that took place during the 1980s (Hanratty and Blank, 1992). In addition, compared with unemployment compensation in the United States, the Canadian unemployment insurance system offered far better income protection to the jobless (though cutbacks since 1994 have reduced the gap between the Canadian and U.S. systems). This might explain why high levels of Canadian joblessness in the 1980s and early 1990s did not cause the surge in inequality that similar unemployment rates would have produced in the United States.

Table 3 summarizes the relative trends in real income growth and income and wage inequality in the G-7 countries. Column 1 shows the rank of each country in the rate of growth of per capita GDP from 1980 to 2000. Column 2 shows each country's rank in the rate of growth of per capita GDP during the most recent decade, 1990-2000.

⁶ To calculate the ninth and first decile wage, it is necessary to rank each worker according to his wage. The wage of the worker who earns more than nine-tenths of workers (but less than one-tenth of workers) is the ninth decile wage; the wage of the worker who earns more than one-tenth of workers (but less than nine-tenths of workers) is the first decile wage.

⁷ Canadian income inequality has risen rather sharply since the mid-1990s, however. (See deGroot-Maggetti, 2000, p. 4, citing Statistics Canada, *Income in Canada 1998*.) The increase was probably caused by cutbacks in unemployment insurance and income support that were necessitated by the government's fiscal consolidation program.

Columns 3 and 4 show each country's rank in the growth of income and wage inequality, respectively. In each column, countries are ranked from highest (rank=1) to lowest (rank=7).

No serious researcher would claim that Table 3 provides conclusive evidence about the relationship between income growth and the trend in inequality. It merely documents the fact that G-7 countries with above-average growth in income have also typically experienced above-average growth in income and wage inequality. The U.S. ranks second in income inequality growth and second in earnings inequality growth. It also ranks second in per capita income growth over the past two decades, just slightly behind Japan. It ranks first in average income growth during the past decade. The United Kingdom has enjoyed relatively rapid average income growth over the past two decades, in contrast with its lagging performance during the earlier post-war period. Britain also experienced the fastest growth in inequality, both in incomes and in wages, of any of the G-7 countries.

We can decompose the reasons for the relative success of each G-7 country in boosting per capita income. There are two main sources of real income growth – growth in the number of hours of work supplied per member of the population and improvements in average worker productivity.⁸ The more successful countries have enjoyed faster-than-average employment growth or above-average productivity growth (or both). From 1980 through 1995, the United States was relatively successful mainly because of exceptional employment growth. Its productivity performance was mediocre. Since 1995 the United States has also enjoyed exceptional productivity growth.

No one knows why American productivity growth was so slow from 1973 to 1994. Part of the surge in U.S. productivity performance after 1994 was due to a faster rate of investment in capital equipment, particularly improved computers and telecommunications. The investment in highly advanced capital equipment probably induced many firms to increase the efficiency of their operations. Nonetheless, much of

⁸ In addition, a country can benefit from an improvement in its terms of trade.

the recent increase in American productivity remains something of a mystery. Until recently, however, strong productivity growth did not account for the high U.S. rank in average income growth. The relatively strong U.S. performance was explained by the rapid expansion of persons in employment and a small increase in average hours worked among employed persons. In many other G-7 countries, employment growth (especially in the private sector) was slow, and in all other G-7 countries, hours per worker sank (Evans, Lippoldt, and Marianna, 2001).

The U.S. success in expanding employment and maintaining high hours of work is partly explainable by the same factors that allowed U.S. inequality to increase so dramatically during the 1980s and early 1990s:

- Parsimonious transfer benefits – including unemployment compensation and public assistance – to maintain the incomes of working-age adults when they are unemployed.
- Parsimonious provision of government-mandated but employer-financed benefits to active workers. (An employer's total contribution for mandatory benefits in the United States is certainly less than 15 percent of workers' compensation; it is probably closer to 10 percent of compensation. In some other G-7 countries, mandatory contributions account for as much as one-third of compensation.)
- Moderate average and marginal tax rates on labor incomes, especially for highly compensated workers.
- A minimum wage that is low relative to average compensation. (In 1980, the minimum wage represented 47 percent of the hourly earnings of an average production worker in nonfarm business. By 1999, it represented just 39 percent of the average hourly wage. This ratio overstates the significance of the minimum wage because most employers voluntarily provide fringe benefits that cost about 15 percent of money wages. Since minimum wage workers typically do not receive these fringe benefits, the minimum wage effectively represents less than 39 percent of average hourly compensation.)
- Weak unions, especially in the private sector. (Trade union density fell from 24 percent to 14 percent between 1980 and 1999; union density in the private sector fell below 10 percent of workers.)
- High rates of immigration -- legal as well as illegal -- combined with an immigration policy that permits the entry of a very large number of unskilled and highly skilled workers. (High immigration probably increases the rate of growth,

but the admission of large numbers of unskilled workers increases U.S. income disparities.⁹⁾

Although U.S. social policy did not change dramatically after 1979, as it did in the United Kingdom, one notable reform of U.S. policy was a re-orientation of transfer programs for low-income working-age adults. Before 1986 benefits to this population were low by the standards of Canada and Western Europe (and they remain low today). However, transfer benefits were much more generous for nonworking Americans than for workers with low market incomes. Since 1986 benefit formulas have been made less generous for nonworkers, but they have been substantially liberalized for low-income workers. The total amount of redistribution toward low-income working-age adults may be roughly unchanged. But in order to qualify for benefits, able-bodied adults are virtually required to work, at least intermittently. Working-age adults who fail to work may lose their eligibility for social assistance benefits, including both cash transfers and food stamps. The most dramatic liberalization of a means-tested program has occurred in the Earned Income Tax Credit (EITC), which supplements the earned incomes of low-income breadwinners. This program offers no benefits at all to adults who do not work. Only workers with modest earnings qualify for benefits. The statistical evidence suggests these reforms have boosted the employment rate of low-skill, low-wage adults, especially women, boosting the rate of employment and output growth (Burtless, 1999b; Meyer and Rosenbaum, 1999a and 1999b).

Arthur Okun's model has little difficulty explaining why these distinctive U.S. programs, policies, and institutions might be associated with more employment growth and higher average hours of work than are observed in other G-7 countries. The advantage of the U.S. institutions should be especially pronounced in relation to those

⁹ All of the increase in the U.S. poverty rate between 1979 and the mid-1990s was due to immigration. The poverty rate of Americans in nonimmigrant households remained unchanged. The U.S. poverty rate rose because the percentage of immigrants in the population increased and the poverty rate of immigrant households worsened, probably because immigrants were drawn from more disadvantaged backgrounds than in the past (Burtless and Smeeding, 2000). It is worth emphasizing that the meager current incomes of many immigrant families represent dramatic improvements over the incomes they would have earned in their countries of origin. The immigration of low-skill workers into the United States worsens U.S. inequality, but reduces world inequality.

of France and Germany, nations which have the best developed social welfare systems among the G-7 countries. One does not need Arthur Okun's insight to conclude the U.S. institutions would contribute to wider inequality in the United States than in other rich industrialized countries.

Except for its liberal immigration policy and declining minimum wage, none of the U.S. policies or institutions I have described directly *caused* the rise in American inequality. The American mixture of institutions and policies did, however, permit inequality to surge when market forces pushed in that direction. It is likely that all of the G-7 countries faced similar kinds of economic shocks that tended to boost income and wage differentials. But *actual* differentials only increased in those countries where government policy and labor market institutions permitted disparities to widen. When policies or institutions prevented differentials from changing in response to a changed environment, there was a sacrifice in overall economic performance. Employment or hours growth slowed, especially in the private sector, reducing the rate of growth in aggregate output.

The United States was not spared from the common set of economic shocks. But much of the burden of these shocks was borne by low-income families and low-wage workers, who experienced sizable losses in their relative incomes. The two-decade pattern of income gains is displayed in Chart 5. Each point along the curved line shows the annual percentage change in equivalent real income for persons at successive points in the U.S. income distribution.¹⁰ On the left, at the fifth percentile of the distribution, equivalent real income rose just 0.6 percent a year between 1980 and 1999, producing a cumulative gain of 12 percent in real income between the two years. On the right, at the 95th percentile of the distribution, average equivalent income rose 2.7 percent per year, producing a cumulative income gain of 67 percent between 1980 and 1999. Average equivalent income received by all Americans in the bottom 96

¹⁰ Equivalent income is calculated by dividing each household's cash income by the square root of the number of persons in the household. Each person's equivalent income is then ranked from lowest to highest to compute the percentiles of the equivalent income distribution. In order to calculate the change in real income at each centile, I converted money incomes in 1980 to 1999 dollars using BLS's CPI-U-RS

percent of the income distribution increased 1.4 percent a year (indicated by the solid line in Chart 5).¹¹

Over the 19-year period, differences in the rate of change in equivalent income yielded dramatic movements in relative well-being. At the 5th percentile, equivalent income rose 12 percent; at the 50th percentile, income increased 24 percent; and at the 95th percentile, income rose 67 percent. In 1980, equivalent income at the 95th percentile was 12.3 times equivalent income at the 5th percentile. Nineteen years later, income at the 95th percentile was 18.2 times income at the 5th percentile. These numbers imply that a sizable fraction of Americans failed to share fully in the strong growth that pushed up average incomes. Of the total equivalent income gains achieved by the bottom 96 percent of the population, exactly half were obtained by people in the 82nd through the 96th centiles, and more than three-quarters were received by people in the 65th through the 96th centiles. Americans in the bottom half of the income distribution received just 10 percent of total equivalent income gains. Clearly, people in the middle or at the bottom of the U.S. income distribution would have achieved better income gains if inequality had remained constant after 1980, even if overall income growth had been substantially slower. U.S. economic performance looks much different from the perspective of those at the top of the income distribution. Households with a high income rank have benefited from robust U.S. growth, and they

price index, a deflator that consistently embodies the most recent BLS procedures for estimating consumer price change.

¹¹ This is substantially less than the average rate of growth of real GDP per person over the period, which was 2.2 percent per year (see top panel of Chart 4). GDP per capita increased faster than equivalent cash income per person for several reasons. First, some sources of increase in GDP, such as the increases in health care spending that are paid for by employer contributions and government insurance, are not reflected in the consumer incomes reported on the CPS. Second, the decline in average household size between 1980 and 1999 reduces the ratio of equivalent income to per capita income. Third, as should be obvious in Chart 5, percentage gains in income were substantially larger at successively higher points in the income distribution. Because the CPS files do not contain reliable measures of incomes in the top 4 percent of the income distribution, I cannot calculate the size of income gains in this part of the distribution. Since these gains represent a substantial percentage of all income gains enjoyed by Americans, the 1.4 percent average income gain shown in Chart 5 significantly understates the average equivalent income gain enjoyed by all Americans, including those at the very top of the distribution.

have also benefited from the tilt in the income distribution that has generated much faster gains at the top than in the middle or bottom.

Canada, France, Germany, and Italy maintained institutions and public policies that restrained or even offset the painful income adjustments required by a new economic environment. These nations probably paid a penalty in terms of output growth. Nonetheless, the low-income and middle-class citizens of these countries were not obliged to accept the relative income sacrifices that were imposed on Americans with a similar position in the income distribution. In fact, slower growth in these countries almost certainly produced bigger income gains for low- and middle-income citizens than the gains obtained by their counterparts in the United States.

Any plausible assessment of economic performance in the G-7 countries must take the distribution of income gains into account. An assessment based only on average income gains suggests that countries with high and growing inequality achieved better growth. An evaluation based on income gains achieved at the bottom or in the middle of the distribution would produce a different ranking of the major industrial countries.

REFERENCES

- Aghion, Philippe, Eve Caroli, and Cecilia Garcia-Penalosa (1999). "Inequality and Economic Growth: The Perspective of the New Growth Theories." *Journal of Economic Literature* 37: 1615-60.
- Burtless, Gary (1998). "Technological Change and International Trade: How Well Do They Explain the Rise in U.S. Income Inequality?" in James A. Auerbach and Richard S. Belous, eds., *The Growth of Income Disparity* (Washington, D.C.: National Policy Association).
- _____ (1999a). "Effect of Growing Wage Disparities and Family Composition Shifts on the Distribution of U.S. Income," *European Economic Review*, 43: 853-65.
- _____ (1999b). "Growing American Inequality: Sources and Remedies," in Henry Aaron and Robert Reischauer, eds., *Setting National Priorities: The 2000 Election and Beyond* (Washington, D.C.: Brookings).
- Burtless, Gary, and Timothy M. Smeeding (2000). "The Level, Trend, and Composition of Poverty," Brookings working paper (Washington, DC: Brookings).
- deGroot-Maggetti, Greg (2000). "Strengthening the Common Good: Towards a Full Participation Economy." (Toronto, Ont.: Citizens for Public Justice).
- Evans, J.M., D.C. Lippoldt, and P. Marianna (2001). "Trends in Working Hours in OECD Countries," Labor Market and Social Policy Occasional Paper No. 45 (Paris: OECD).
- Ferreira, Francisco H.G. (1999). "Inequality and Economic Performance: A Brief Overview to Theories of Growth and Distribution." World Bank working paper. (Washington, DC: World Bank).
- Federal Bureau of Investigation (2000). *Crime in the United States, 1999: Uniform Crime Reports*. (Washington, DC: U.S. Government Printing Office).
- Gottschalk, Peter, and Timothy M. Smeeding (1999). "Empirical Evidence on Income Inequality in Industrialized Countries," LIS Working Paper No. 154 (Luxembourg: Luxembourg Income Study).
- Hanratty, Maria J., and Rebecca M. Blank (1992). "Down and Out in North America: Recent Trends in Poverty Rates in the United States and Canada." *Quarterly Journal of Economics* 25: 233-54.
- Karoly, Lynn, and Gary Burtless (1995). "Demographic Change, Rising Earnings Inequality, and the Distribution of Personal Well-Being, 1959-1989," *Demography* 32: 379-405.
- Kuznets, Simon (1955). "Economic Growth and Economic Inequality." *American Economic Review* 45: 1-28.

Lerman, Robert I., and Shlomo Yitzhaki (1985). "Income Inequality Effects by Income Source: A New Approach and Applications to the United States." *Review of Economics and Statistics* 67: 151-56.

Meyer, Bruce D., and Dan T. Rosenbaum (1999a). "Welfare, the Earned Income Tax Credit, and the Labor Supply of Single Mothers," NBER Working Paper No. 7363 (Cambridge, MA: NBER).

_____ (1999b). "Making Single Mothers Work: Recent Tax and Welfare Policy and its Effects," NBER Working Paper No. 7491 (Cambridge, MA: NBER).

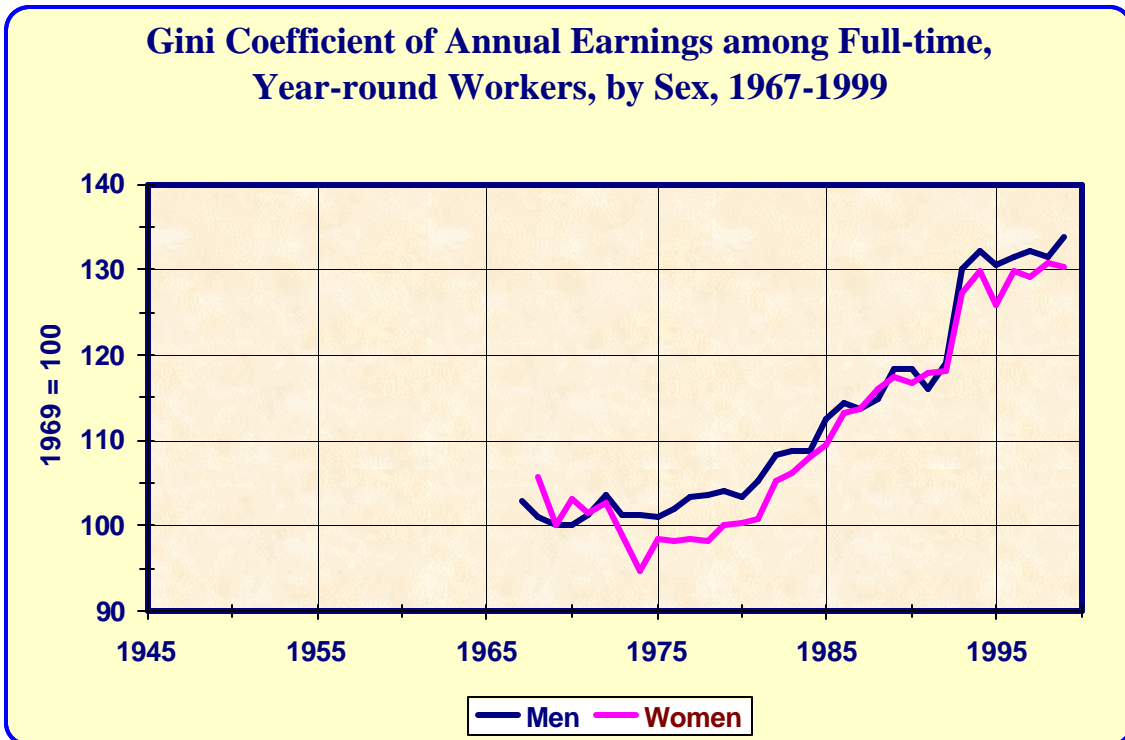
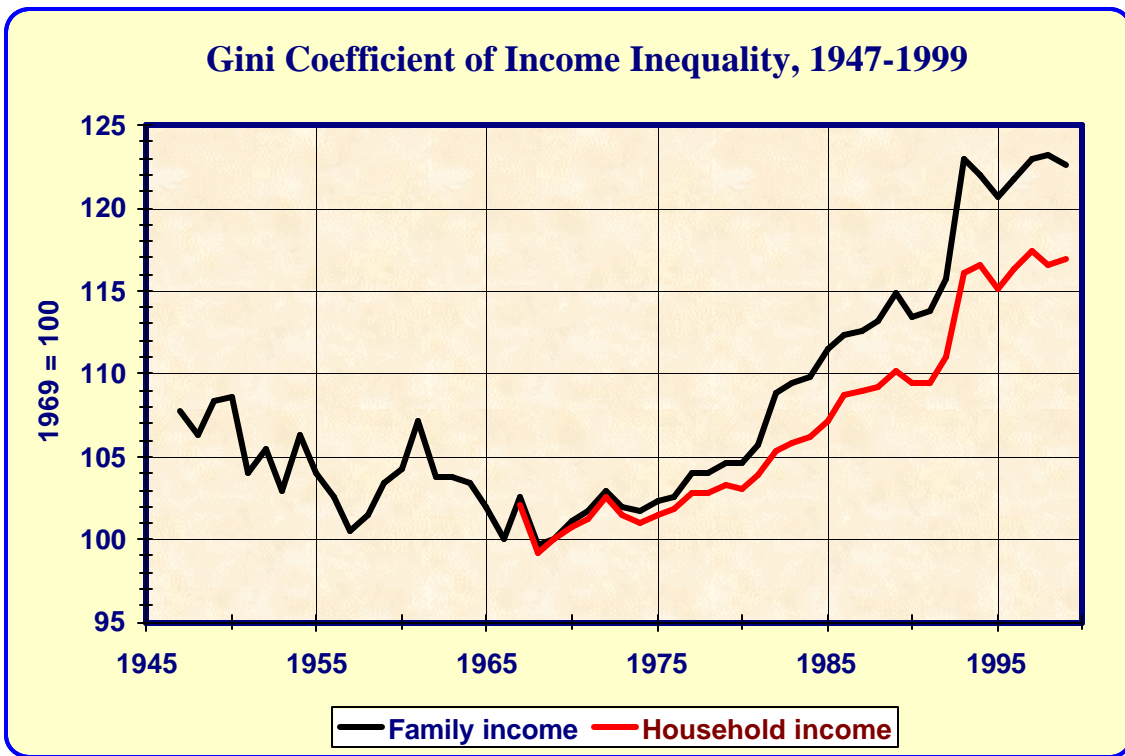
Okun, Arthur M. (1975). *Equality and Efficiency: The Big Tradeoff*. (Washington, DC: Brookings).

OECD (1996). *Employment Outlook*. (Paris: OECD).

OECD (2000). *OECD in Figures 2000*. (Paris: OECD).

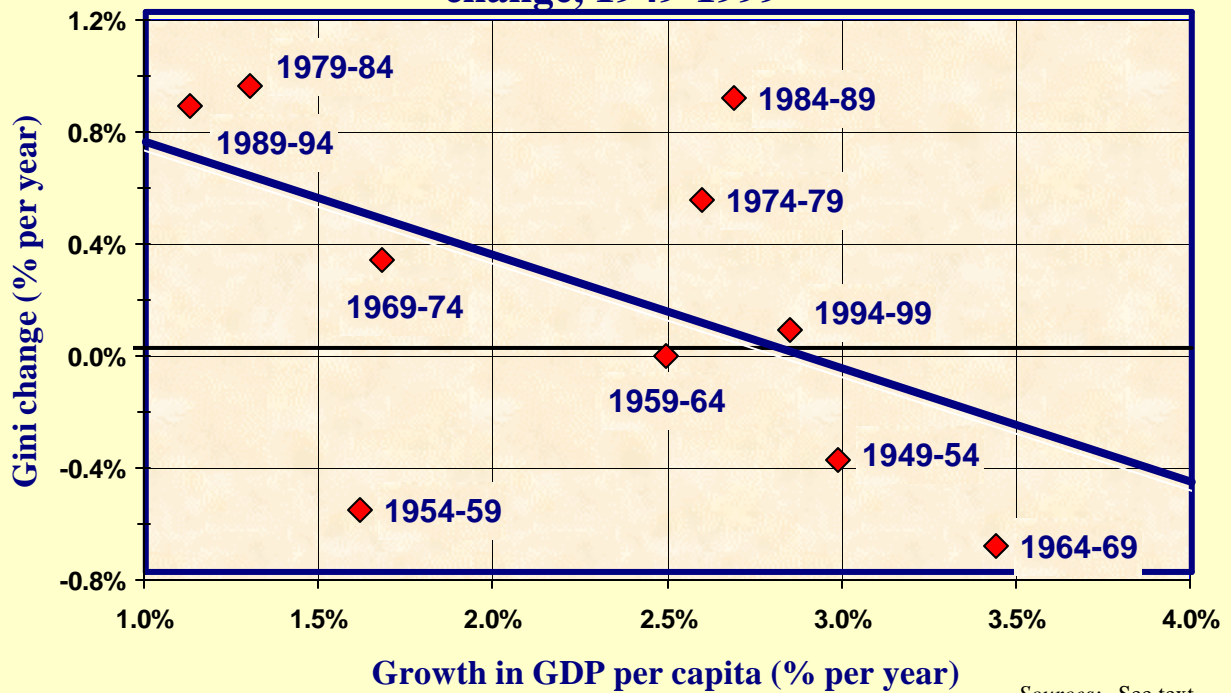
Rennison, Callie Marie (2001). *Criminal Victimization 2000: Changes 1999-2000 with Trends 1993-2000*. (Washington, DC: U.S. Department of Justice, Office of Justice Programs).

Chart 1. Trend in Post-War U.S. Inequality



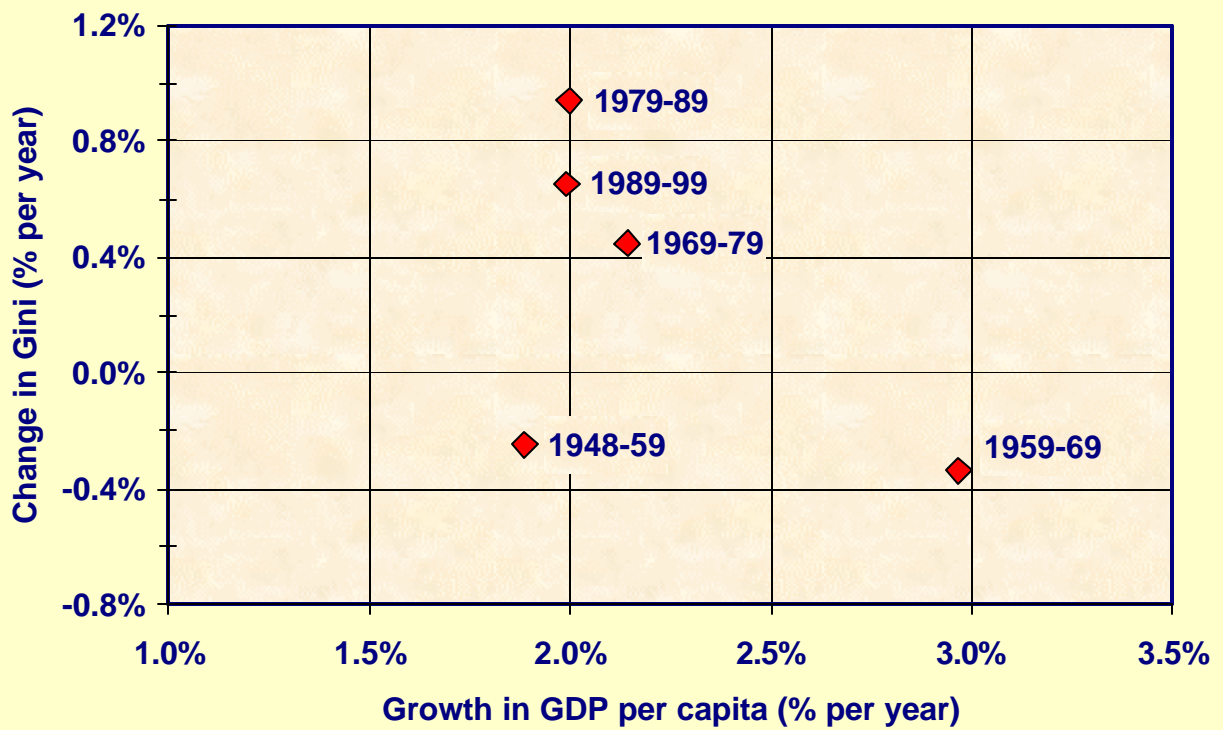
Source: U.S. Census Bureau.

Chart 2. Relation of Gini coefficient change and GDP change, 1949-1999



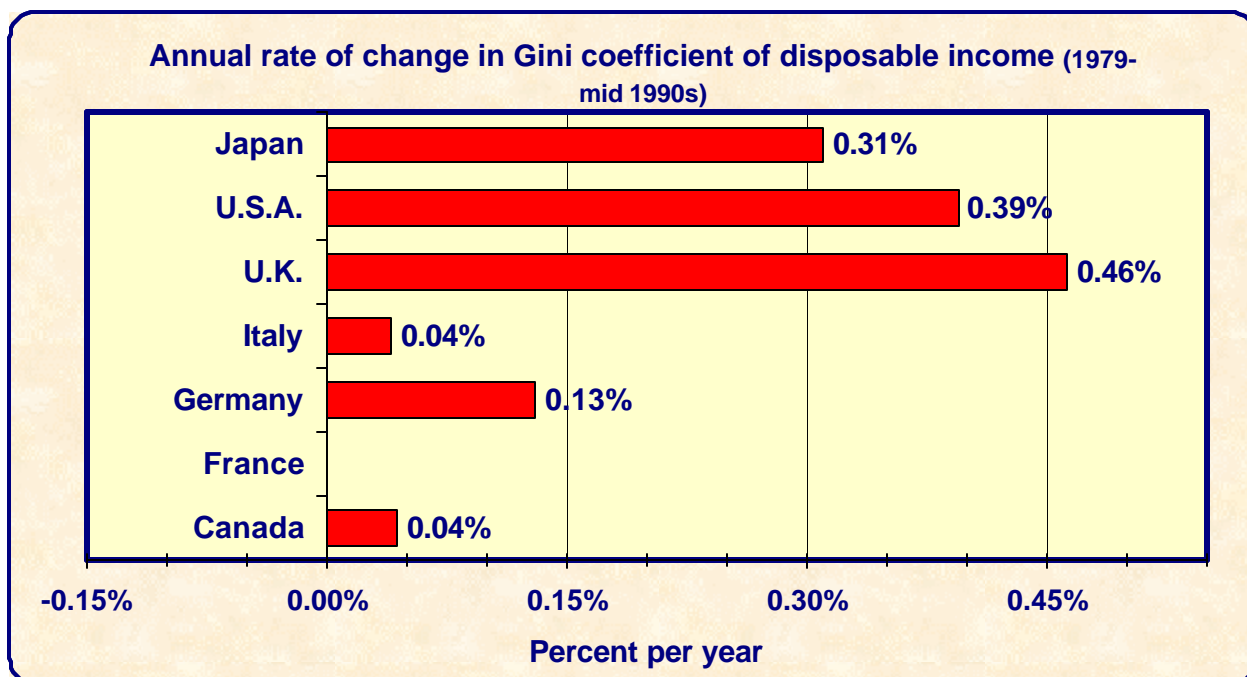
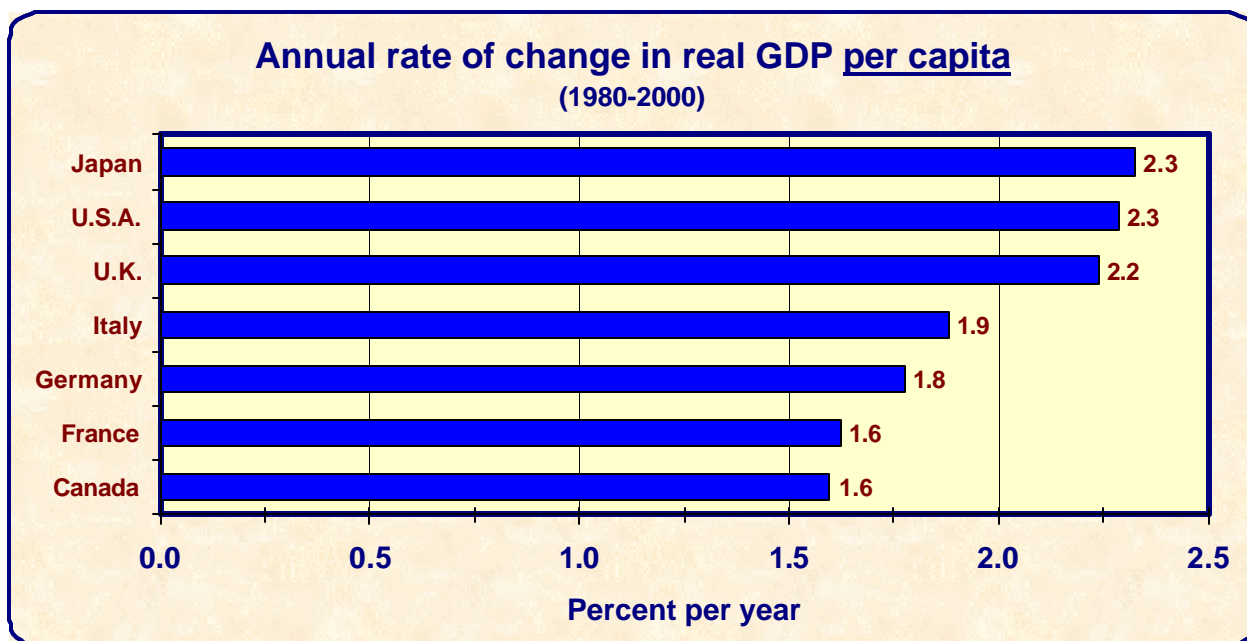
Sources: See text.

Chart 3. Relation of Gini Coefficient Change and GDP Change, 1948-1999



Sources: See text.

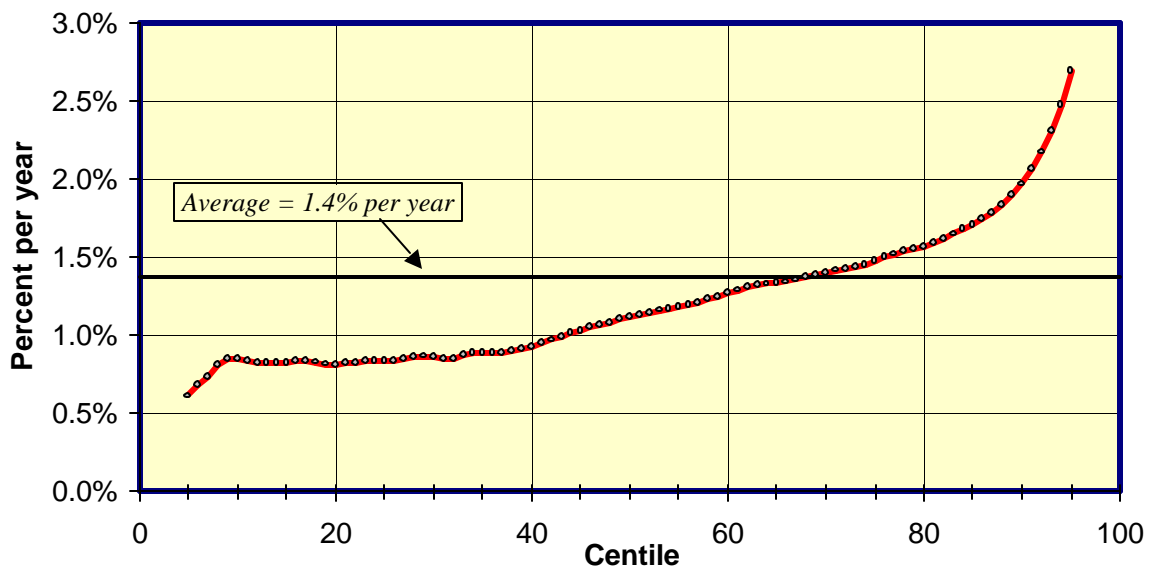
Chart 4. Growth and Inequality Trends in G-7 Countries



Note: Growth in German GDP per capita measured as growth in Western Germany through 1991 and growth in unified Germany 1991-2000.

Sources: Top panel - IMF World Economic Outlook database (April 2001); Lower panel - (for Italy) Atkinson, Brandolini, and Smeeding (2000); (for Japan) Gottschalk and Smeeding (1999); for all other countries, LIS database updated June 2001.

Chart 5. Annual Rate of Growth of U.S. Equivalent Personal Income, by Centile, 1980-1999



Note: 'Equivalent personal income' is calculated as household cash income divided by the square root of the number of household members. Persons in the population are ranked from lowest to highest on the basis of their equivalent personal incomes. The average rate of growth, 1.4%, is the annual rate of change in equivalent income of all persons except those in the top 4% of the income distribution.

Source: Author's tabulations of March 1981 and March 2000 Current Population Survey files.