

THE ECONOMIC SECURITY OF AMERICAN HOUSEHOLDS



Issue Brief One: The Evolution of Earnings and Income

U.S. Treasury Department
Office of Economic Policy

April 2016

Ryan Nunn and Tara Watson were the principal drafters of this report. Inquiries should be directed to the Office of Economic Policy at (202) 622-2200

The Economic Security of American Households

Issue Brief One

This report is the first in a series investigating the current economic situations of Americans. What are areas of strength and weakness? What factors contribute to household-level economic insecurity, and what are sources of resilience?

The first issue brief will motivate and set the stage for the following briefs by providing an overview of the long-run trends in the economic situation and outlook for American households over the past forty years. There will be two contributions of this brief. First, we will examine how earnings have changed at over time at each age for American workers. Second, we will describe the evolution of income levels and the income distribution of American households. We will specifically look at the experience of different generations as their income evolves over their lives. And we will look at differences across educational groups and different parts of the income distribution.

Future briefs will examine issues such as perceptions of economic security, household income volatility, the transition into the labor market for young adults, assets and debts, retirement security, and the role of the safety net.

Key Findings

- Recent cohorts of men who work full-time (those born in the 1960s and 1970s) have lower real earnings in early ages than men in the past, and it appears that the age of peak earnings is later.
- Compared to prior generations, men with a high school degree have seen substantial earnings declines across the life cycle. Men with advanced degrees, on the other hand, have seen substantial earnings gains.
- The earnings of full-time women are higher in more recent generations at every level of education. Despite these gains over time, women still earn less than men.
- For both women and men, there is more inequality across the wage distribution than in the past.
- A declining fraction of households are led by married couples, and this especially true among less educated Americans. As a result, despite the expansion in women's labor force participation, there are fewer adult earners in a typical household than in the past.
- Households headed by individuals without a college degree have seen the biggest decline in the number of earners and total hours worked.
- The combination of rising wage inequality and changing household structure has produced higher levels of household income inequality in recent generations. Economic gains over the past four decades have not been broadly shared.

The Economic Security of American Households

Issue Brief One

What is Economic Security?

The term “economic security” is used in a variety of ways. Here, **we think of economic security to mean one’s current and prospective material well-being, assessed both objectively and subjectively.** Thus, economic security is related to both actual and perceived current economic status, expectations about the future, and future risks. In past studies, the term has been sometimes used to mean household volatility in income or economic well-being. We will devote a future brief to the exploration of volatility, but we view it as just one component of economic security, albeit an important one.

For young adults, economic security is determined by employment prospects, income, and possibly debt accumulated from higher education and other investments like a first car or home. As people age and approach retirement, concerns are likely to shift towards assets and retirement income adequacy. Future issue briefs will look more closely at debt and wealth at different stages in the life cycle, as these are key underpinnings of economic security.

We now start by describing the earnings of American workers, as labor income is the main source of income for most households and thus a primary determinant of economic well-being and security. We will examine hourly wages, hours worked, and overall earnings inequality for both men and women. Because individual well-being is strongly affected by household-level income, we then turn our attention to changing household structures. We then consider how trends in male earnings, female earnings, and household composition combine to affect household-level income and income inequality.

How have earnings evolved over time?

We look at the evolution of earnings over the life-cycle for different generations. In particular, we examine hourly wages of full time workers ages 25 to 64 for different birth cohorts, highlighting the differences in trends for men and women over the last few decades. Here we use the Current Population Survey and focus exclusively on the non-institutionalized population.

Male Earnings

To compare how different generations fare over the life cycle, we plot the hourly earnings of each generation at different ages. Typically workers experience steadily increasing earnings early in their careers, a gradual flattening, and eventually a decline at older ages, even for those who remain in the labor force full time. For example, the light green line in Figure 1 below shows the median earnings of full-time workers born in the 1950s, shown at different ages and adjusted for inflation. By comparing different lines – each representing a certain generation’s path over the life cycle – one can learn how earnings patterns for more recent generations

The Economic Security of American Households

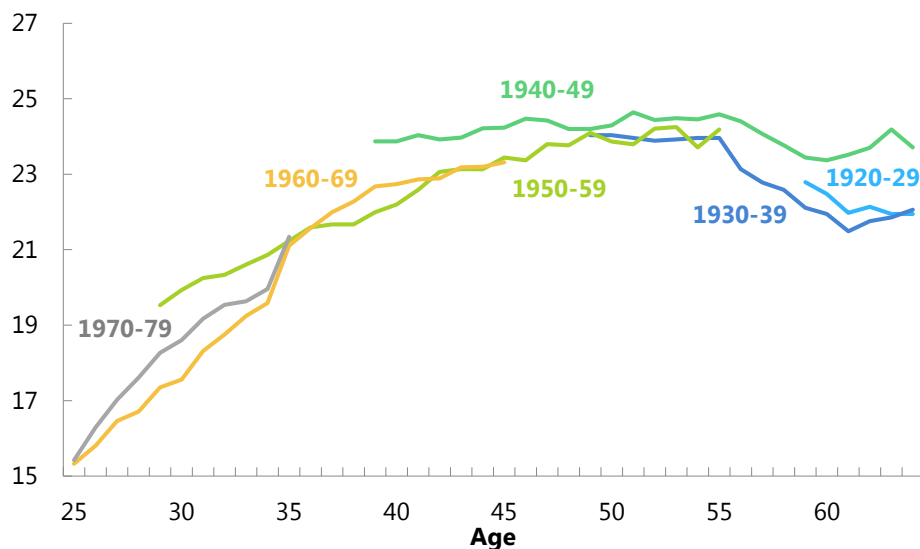
Issue Brief One

compare to those in the past. (The lines span different ages for different cohorts because of limited data availability.)

Younger men working full time earn less than they did in the past after adjusting for inflation, and the age of peak earnings is reached later than in the past.

First, we see a striking pattern in Figure 1: men born in the 1960s and 1970s (shown with the yellow and gray lines in the figure) earn substantially less in real terms at young ages than they did in earlier generations. Men born in the 1970s (gray line) earned significantly less than men born in the 1950s (light green line) at age 30. As men approach middle age, however, they gradually approach the earnings of men in their fathers' generations. For example, the earnings of men born in the 1940s (dark green line) exceeded their counterparts born in the 1950s (light green line) by 7 percent at age 40, but both groups had similar earnings at age 50. In addition, it appears that age-related declines in earnings are occurring later (or perhaps not at all) for newer cohorts. The decline in earnings around age 55 observed in the 1930s birth cohort (dark blue line) is not evident in the 1940s birth cohort (dark green line). In other words, men seem to maintain their peak wages into older ages, perhaps because of health improvements or the changing nature of work.

Figure 1: Median Real Wages by Birth Cohort, All Full-Time Men
Median Real Hourly Wage (\$2014)



Source: Current Population Survey and Treasury calculations. The sample is restricted to full-time workers aged 25-64.

The Economic Security of American Households

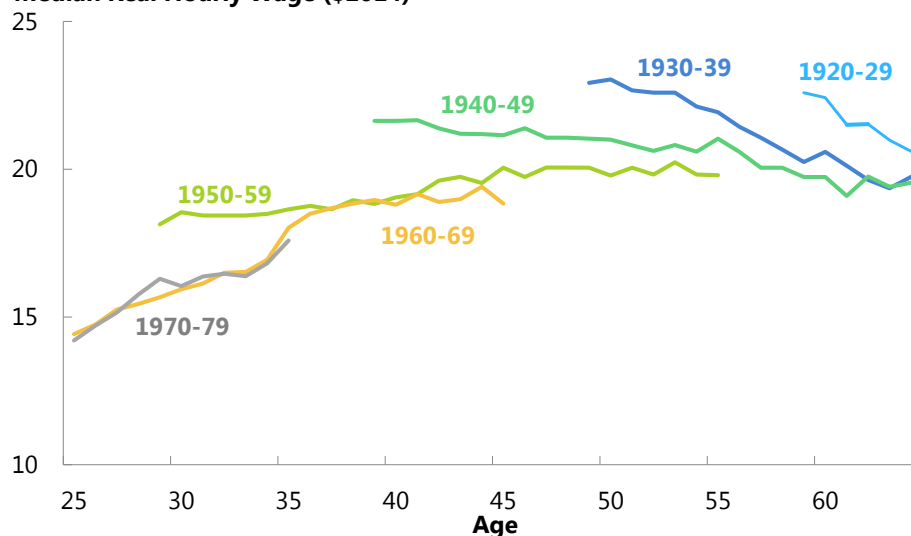
Issue Brief One

Compared to past generations, real earnings for high-school graduate men are lower at every age.

The graphs below demonstrate stark differences between the fortunes of high-school-educated men and college-educated men. Young men with only a high school education have earnings that are substantially lower than those in their fathers' generations earned at the same age (Figure 2). For instance, the generation born in the 1960s (yellow line) earned roughly 13 percent less in real terms at age 40 than the generation born in the 1940s (dark green line). A similar gap is apparent comparing those born in the 1950s (light green) to those born in the 1930s (dark blue line) at age 50, or those born in the 1920s (light blue line) to those born in the 1940s (dark green line) at age 60. This pattern of declining wages for high-school graduates likely represents a combination of weakening labor demand for this group, changes in the characteristics of the typical high school graduate, and institutional factors like declines in unionization and the real value of the minimum wage.

There are several silver linings to an otherwise discouraging picture. First, the downtrend in earnings for high-school-educated men may have abated. The full-time workers in the 1970s birth cohort have had similar or slightly better early-career earnings than the 1960s birth cohort. Second, as in the population overall, the age of earnings decline may be occurring later, if at all. Unlike in the past, high-school-educated men who were born in the 1960s and have stayed in the labor force appear to have been able to maintain their peak earnings into their 50s (the last point at which we can observe them). In addition, as men become more educated, fewer will be part of this hard-hit group in the future.

Figure 2: Median Real Wages, by Birth Cohort, Men with High School Diploma
Median Real Hourly Wage (\$2014)



Source: Current Population Survey and Treasury calculations. The sample is restricted to full-time workers aged 25-64.

The Economic Security of American Households

Issue Brief One

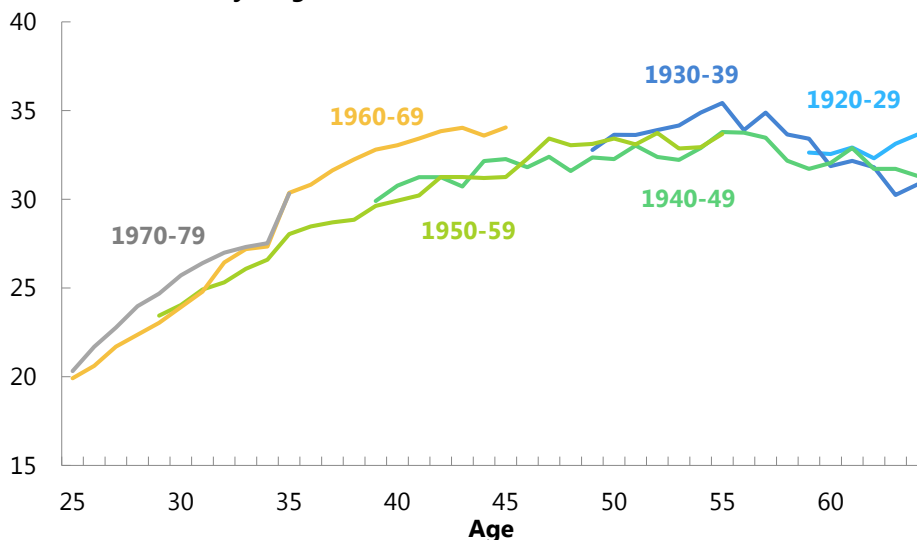
Men with a college degree have a similar earnings trajectory to those in the past, and men with a graduate degree earn far more than in the past.

Earnings of full-time workers with exactly a four-year college degree follow a similar trajectory relative to previous generations, with evidence of higher earnings early in life for the most recent generations (Figure 3). The 1970s birth cohort has slightly higher earnings at age 30 than the 1960s birth cohort, which in turn has higher earnings at age 40 than the 1950s birth cohort. By age 50, however, the 1930s cohort, the 1940s cohort and the 1950s cohort all earn similar amounts.

Men with advanced degrees have witnessed substantial earnings gains in recent generations (Figure 4), consistent with the general picture of rising inequality. Men with a graduate degree born in the 1960s earned 19 percent more at age 40 than comparable men born in the 1940s, for example.

It is also worth noting that - regardless of birth cohort - men with higher levels of education have a delayed onset of age-related wage declines relative to less-educated men. Rising education levels therefore may allow men to enjoy high wages for a longer period of time. Those that stay in the labor force appear to be able to largely maintain their peak level of earnings beyond age 60.

Figure 3: Median Real Wages by Birth Cohort, Full time Men with College Degree
Median Real Hourly Wage (\$2014)

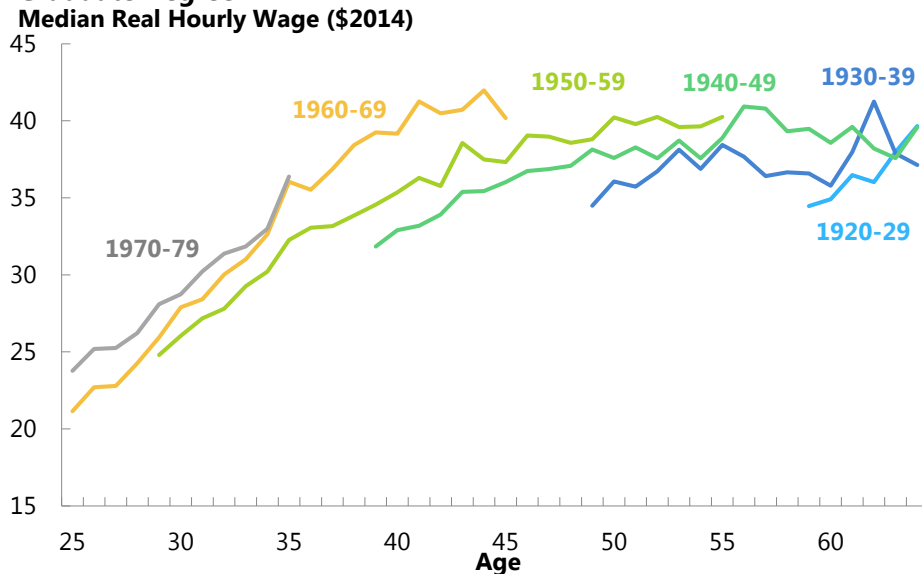


Source: Current Population Survey and Treasury calculations. The sample is restricted to full-time workers aged 25-64.

The Economic Security of American Households

Issue Brief One

Figure 4: Median Real Wages by Birth Cohort, Full time Men with Post-Graduate Degree



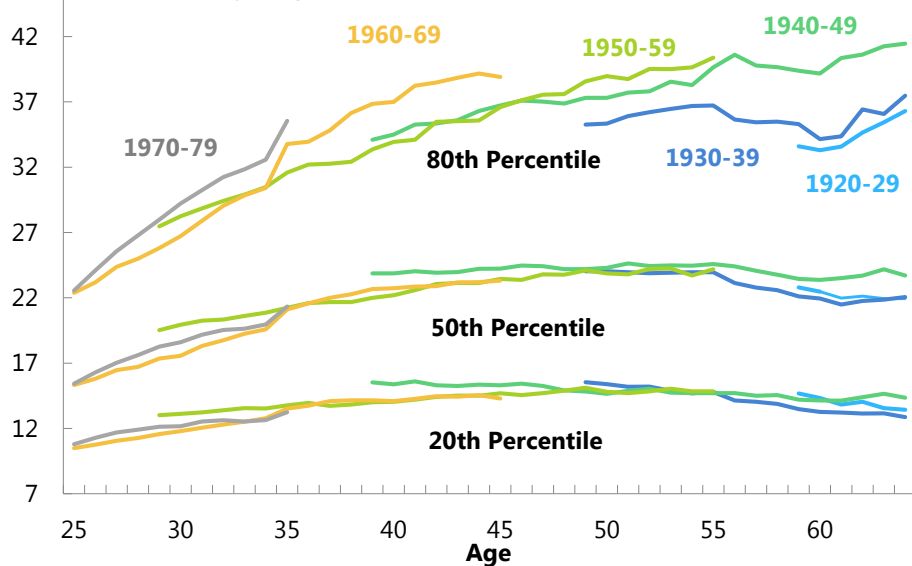
The earnings picture for men overall (Figure 1 above) represents a combination of two notable changes. The first is a movement towards higher educational attainment, which is associated with higher earnings at every age for every cohort. In addition, education may allow men to sustain high earnings into their 50s and 60s more than they did in the past. The second striking fact is a growing disparity between more- and less-educated men. Greater educational attainment raises overall earnings, largely offsetting declines stemming from weak wage growth *within* some education groups. There is also rising inequality within education groups (not shown).

Figure 5 shows how these factors – shifts in the educational distribution and changes in inequality between and within educational groups – fit together. There is widening inequality in earnings of men working full-time, with wages at the 20th and 50th percentiles stagnant or declining after adjusting for inflation, and substantial gains in earnings at the 80th percentile.

The Economic Security of American Households

Issue Brief One

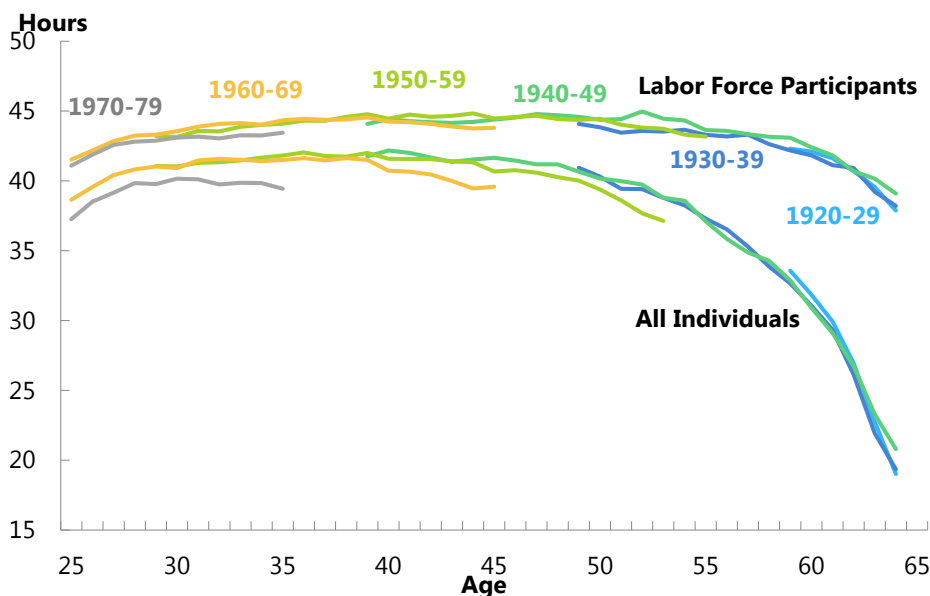
Figure 5: Distribution of Real Wages by Birth Cohort, All Full Time Men
Median Real Hourly Wage (\$2014)



Source: Current Population Survey and Treasury calculations. The sample is restricted to full-time workers aged 25-64.

The figures thus far are based on men working full-time and, as a result, do not tell the entire story. During peak working years (ages 25-54), only about 77 percent of men work full-time. Another 6 percent or so work part-time, and these workers typically earn lower wages. On average, the number of hours worked by men is lower for recent cohorts, especially if one includes men not participating in the labor force, as shown in Figure 6. The shift towards fewer hours impacts the total earned income for men.

Figure 6: Average Hours Worked by Birth Cohort, Men



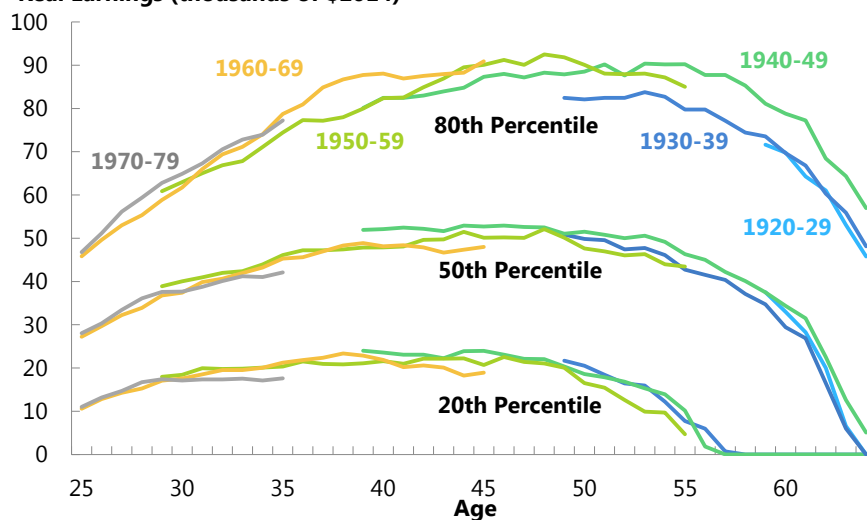
Source: Current Population Survey and Treasury calculations. The sample is restricted to respondents aged 25-64.

The Economic Security of American Households

Issue Brief One

In Figure 7 we show the distribution of annual earnings for all men ages 25 to 64, including those who work part-time or are not working. Because those who work fewer hours also tend to earn lower hourly wages, the inequality in annual earnings is more pronounced than that of hourly wages of full-time workers. The 80-20 ratio at age 45 has risen from 3.6 in the 1940s birth cohort to 4.8 in the 1960s birth cohort. In other words, a 45-year-old man at the 80th percentile of annual earnings among 45-year-old men now earns almost five times the income of a man at the 20th percentile.

Figure 7: Distribution of Annual Earnings by Birth Cohort, All Men (Including Non-Earners)
Real Earnings (thousands of \$2014)



Source: Current Population Survey and Treasury calculations. The sample all respondents aged 25-64.

The Economic Security of American Households

Issue Brief One

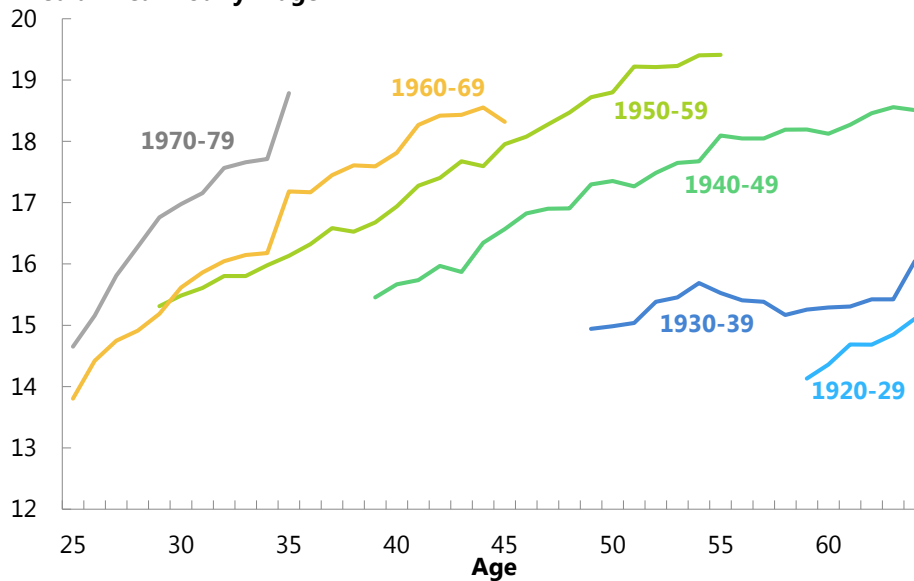
Female Earnings

In contrast to the trajectories of men, recent cohorts of full-time women are improving their earnings at every age.

Full-time women earn substantially more than they did in the past at every age (Figure 8). For example, the typical full-time working woman born in the 1960s earned 11 percent more at age 45 than her counterpart born in the 1940s. Hourly earnings levels are still substantially below those of men, however. For example, at age 45 a typical full-time woman born in the 1960s earns \$18 per hour, whereas the typical man of her cohort earns \$23 per hour.

Figure 8: Median Real Wages by Birth Cohort, All Full-Time Women

Median Real Hourly Wage



Source: Current Population Survey and Treasury calculations. The sample is restricted to full-time workers aged 25-64.

The Economic Security of American Households

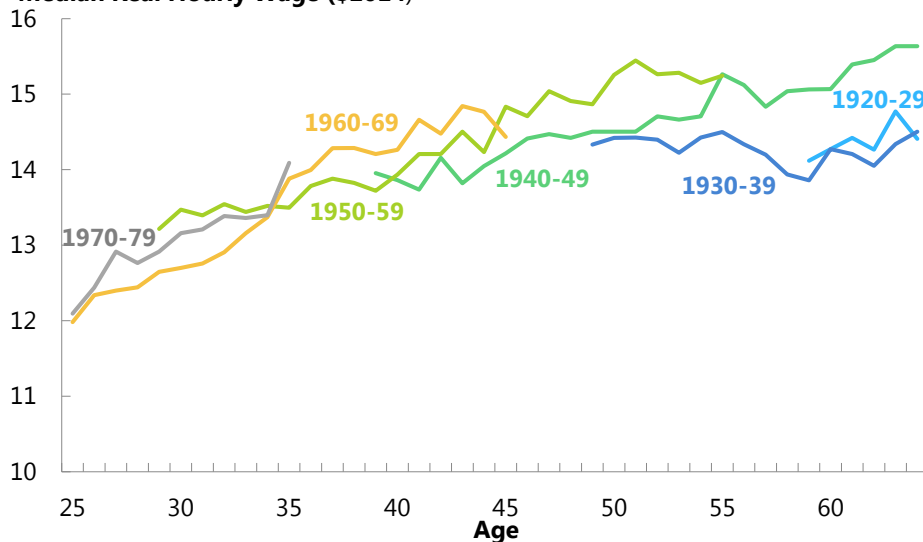
Issue Brief One

Higher earnings are not just a function of rising education. Women at every education level earn higher inflation-adjusted wages than previous cohorts of women.

As shown in Figure 9, high-school educated women have not seen the same wage declines experienced by high-school educated men. Women with a college degree (Figure 10) or a post-graduate degree (Figure 11) have seen substantial gains relative to years past.

Figure 9: Median Real Wages by Birth Cohort, Full Time Women With a High School Degree

Median Real Hourly Wage (\$2014)



Source: Current Population Survey and Treasury calculations. The sample is restricted to full-time workers aged 25-64.

The Economic Security of American Households

Issue Brief One

Figure 10: Median Real Wages by Birth Cohort, Full-Time Women with Undergraduate Degrees
Median Real Hourly Wage (\$2014)

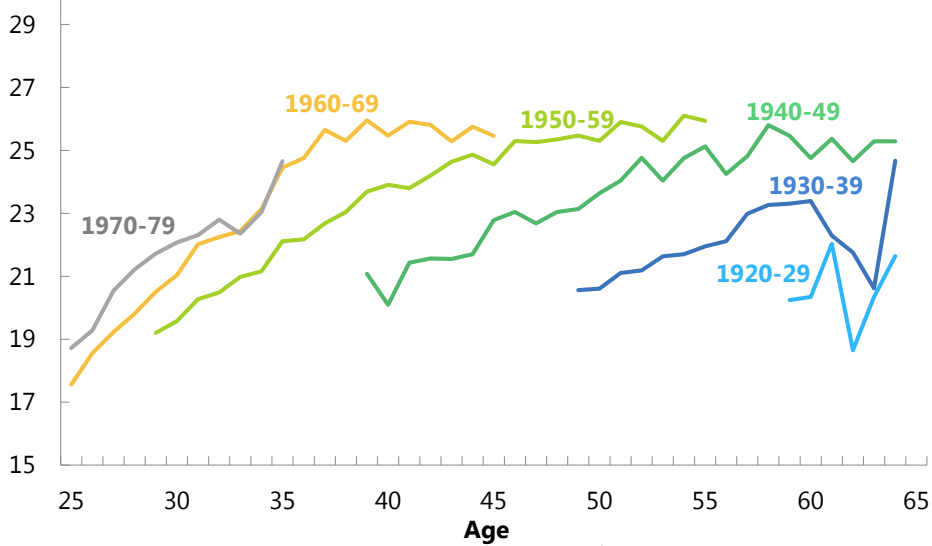
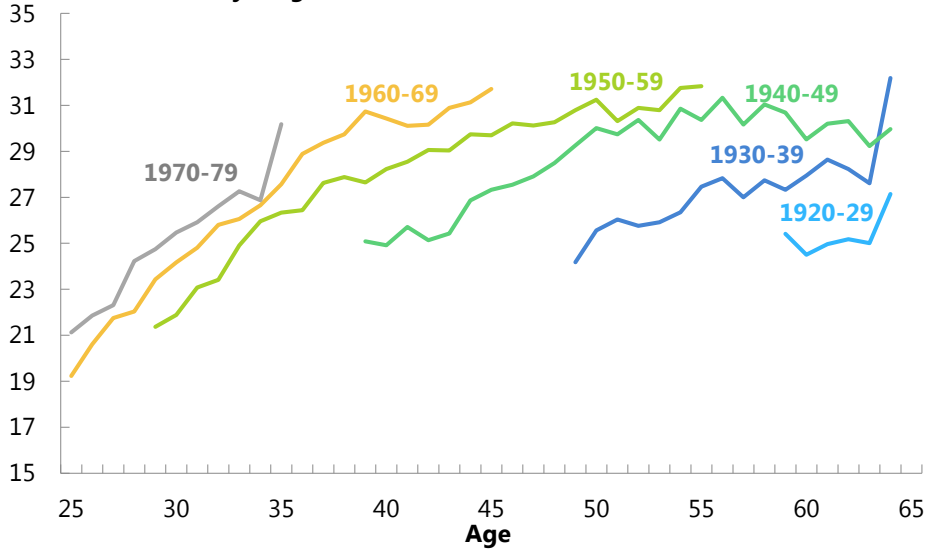


Figure 11: Median Real Wages by Birth Cohort, Full-Time Women with Post-Graduate Degrees
Median Real Hourly Wages (\$2014)



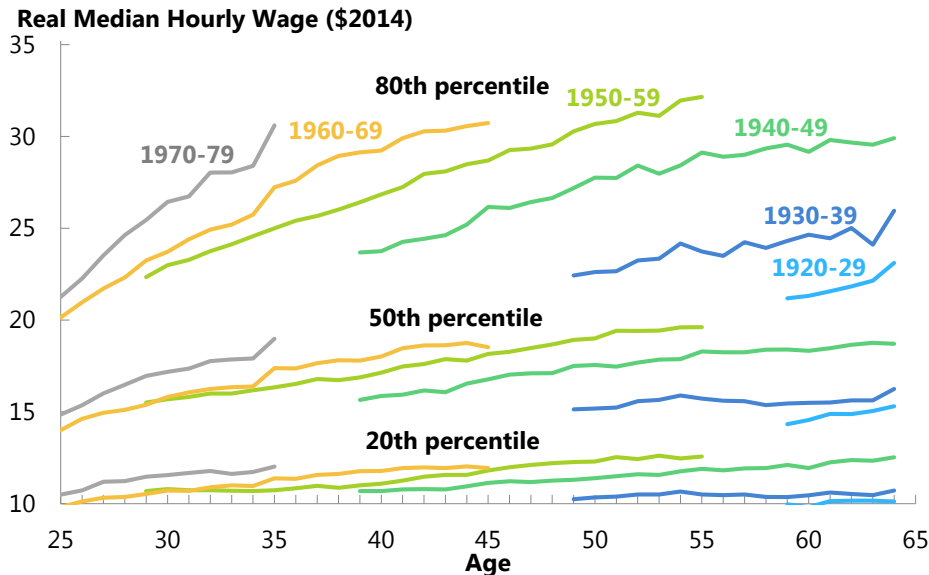
The Economic Security of American Households

Issue Brief One

As is the case for men, the economic situation of full-time women is not fully described by the education-specific graphs because women are becoming increasingly highly educated over time. There is also rising inequality within education groups.

Figure 12 makes it clear that the highest earning women in recent generations have much higher earnings than those in prior generations, resulting in rising wage inequality among full-time women. Wage inequality among women is more modest than among men, with an 80-20 ratio at age 45 of 2.6 for the 1960s birth cohort and 2.4 or the 1940s birth cohort.

Figure 12: Distribution of Real Wages by Birth Cohort, All Full-Time Women

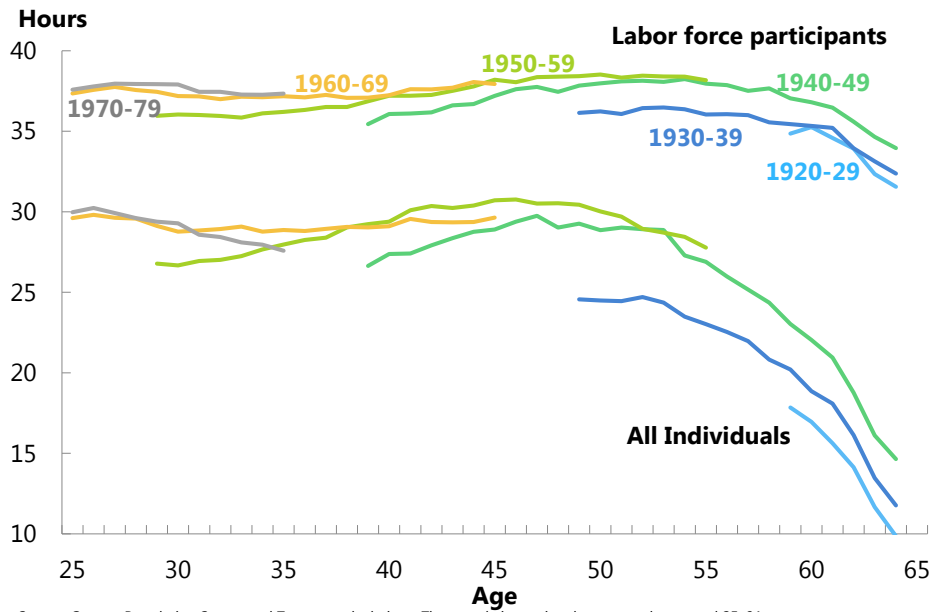


It is also important to note that many women do not work, and the propensity to work full time varies by generation. At age 40, for example, around 56 percent of women in the 1950s cohort and 1960s cohort are full time workers, compared to 48 percent in the 1940s cohort. Figure 13 plots the changes in weekly hours worked for women – both for those in the labor force and for all women – across cohorts. There were particularly dramatic gains in the number of hours worked between the 1930s birth cohort and the 1950s birth cohort.

The Economic Security of American Households

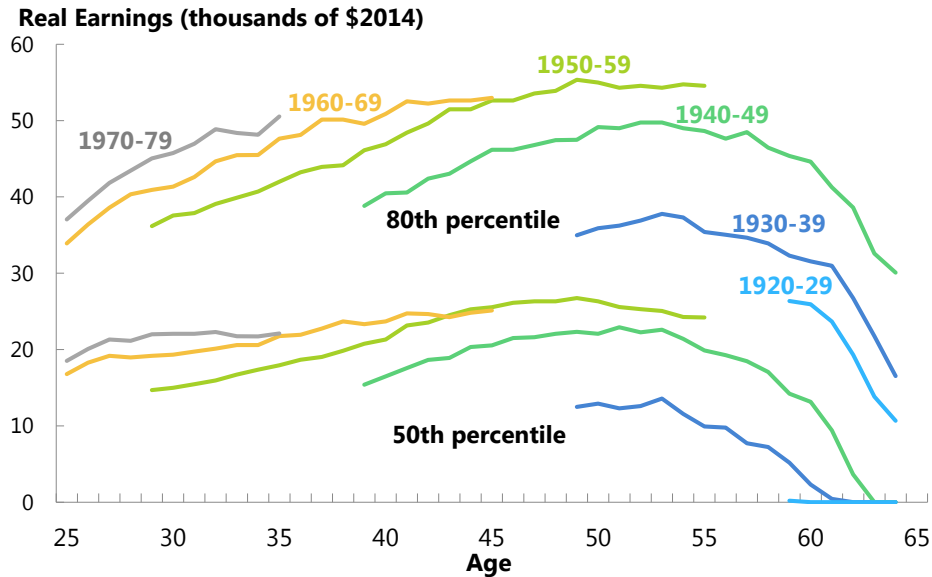
Issue Brief One

Figure 13: Average Weekly Hours Worked, Women



Source: Current Population Survey and Treasury calculations. The sample is restricted to respondents aged 25-64.

Figure 14: Distribution of Annual Earnings by Birth Cohort, All Women (Including Non-Earners)



Source: Current Population Survey and Treasury calculations. The sample includes all respondents aged 25-64.

The Economic Security of American Households

Issue Brief One

A complete picture of women's earnings takes account of women who work part-time, who typically earn less on an hourly basis and work fewer annual hours, and those who are not working. Figure 14 shows the distribution of inflation-adjusted annual earnings for all women ages 25 to 64 (note that the 20th percentile is not shown, because it is equal to zero for all cohorts). Here we see higher annual earnings among workers throughout the income distribution for recent cohorts relative to past cohorts. There is also rising inequality in annual earnings because recent generations of women have seen particularly large earnings gains at the top of the distribution.

The Economic Security of American Households

Issue Brief One

What is the economic situation of American households?

Because households often include more than one earner, the different wage patterns for men and women suggest that we should consider households as a whole. This section does so.

We have examined earnings per hour and seen that earnings among full-time male workers are lower than in the past, especially for younger and less educated men. It is also the case that male participation in the labor force has been steadily declining since the Bureau of Labor Statistics began reporting it in 1948. By contrast, earnings of full-time women are on the rise for all education levels, and women work substantially more hours than they did in prior generations. Thus, household incomes could – in principle - be increasing even in an era of declines in men’s earnings.

A countervailing force is declining marriage rates, which implies that more households have only one adult. Households headed by married couples or unmarried partners have the capacity to work more total hours, and therefore are more likely to be represented among the highest income households.

Though the fraction of household heads that are married has decline in all education groups, the least-educated Americans experienced the most substantial drop in marriage rates.

In Figure 15, we focus on households head between the ages of 40-49 and examine the marital status of that group over time. Household heads are less likely to be married than in the past overall and for each education group. However, the probability of being married has stabilized around 65 to 70 percent among household heads in their 40s with at least a college degree. By contrast, only about 55 percent of household heads in their 40s without a college degree are married.

The Economic Security of American Households

Issue Brief One

Marital status directly affects household income to the extent that it impacts the number of adult earners in the household. Figure 16 shows that households headed by individuals in their 40s are indeed less likely to have more than one adult earner than was true two decades ago. Furthermore, this trend away from two-earner families is more pronounced among less educated households.

Figure 15: Marriage Rates by Level of Education
Portion Married

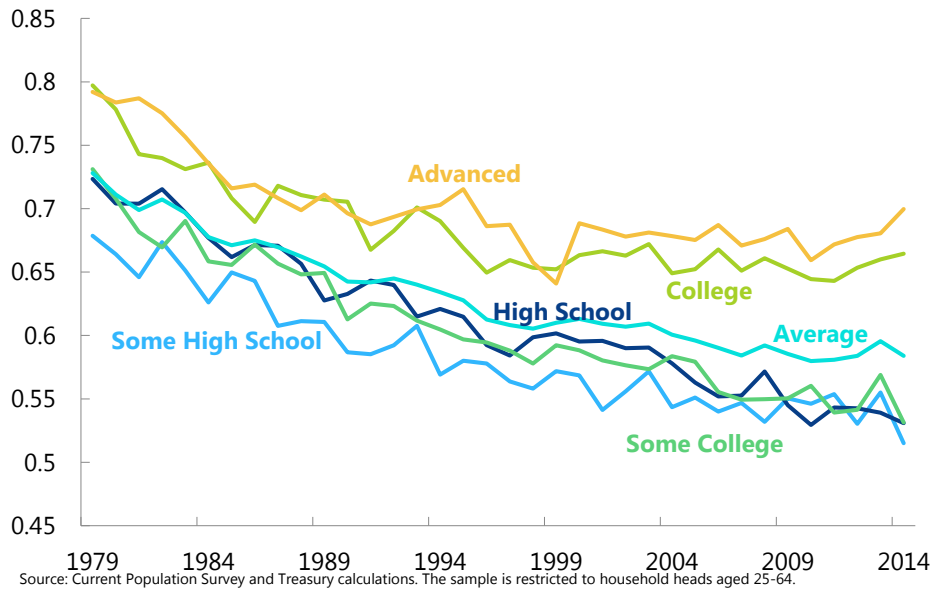
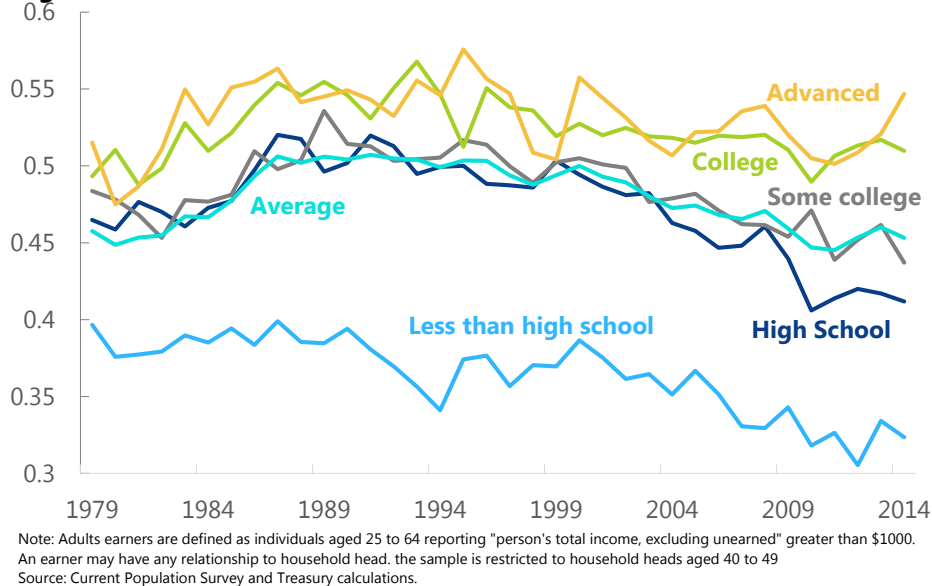


Figure 16: Fraction with More Than One Adult Earner in Household - Ages 40 to 49



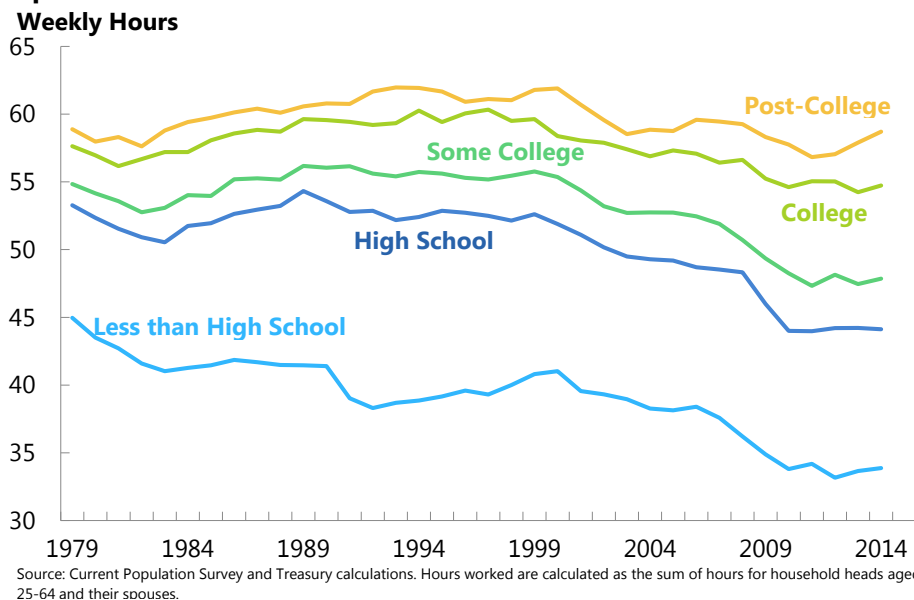
The Economic Security of American Households

Issue Brief One

Changes in hours per worker and changes in the number of earners combine to have important implications for the total number of hours worked in households. To examine hours worked, we combine the hours worked of the respondent and spouse (if any) in households in Figure 17. In fact, the combination of declining marriage rates and other factors means that the total number of hours worked in households has *declined* in recent decades despite more women participating in the labor market, and has declined more at the bottom of the educational distribution.

Compared to two decades ago, households headed by a working age person with no college education work more than ten percent fewer hours each week, whereas there has been no similar decline in weekly hours at the top of the educational distribution.

Figure 17: Combined Weekly Hours Worked of Household Head and Spouse



This is not simply a story of unmarried partners substituting for married partners in less-educated households. Results are similar if one looks at total hours worked in the household.

Changing earnings per hour, changing hours worked, and changing household structures combine to generate significantly rising income inequality at the household level.

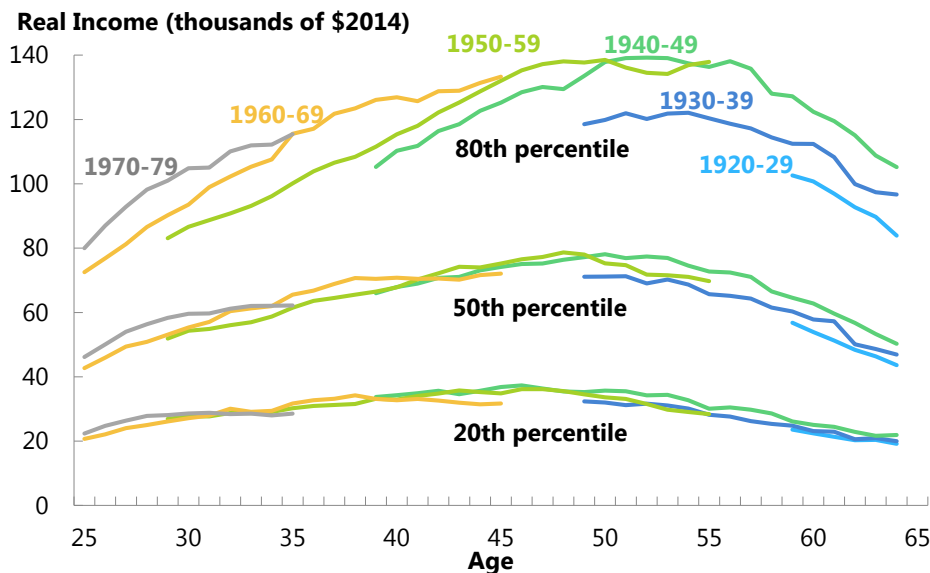
The Economic Security of American Households

Issue Brief One

Figure 18 below organizes the household income data following ten-year birth cohorts over the life cycle of household heads. The median income of each cohort (the 50th percentile) has evolved relatively similarly with age. By contrast, the 80th percentile at every age has higher income than in the past. The 20th percentile has incomes similar to or slightly lower than prior generations. This figure reflects both earned and unearned pre-tax income captured in the Current Population Survey.

Separate analysis (not shown) also shows rising inequality in family income-to-needs ratios for recent generations.

Figure 18: Real Household Income Distribution by Birth Cohort of Household Head



Higher-income households have steeper age-income profiles and hit peak incomes later in life.

As shown in Figure 18 above, the 80th percentile has significantly higher income at age 25 than lower percentiles, and differences between the 80th and the 20th widen during the working years. The incomes of high-income households do not appear to decline until around age 55, whereas the decline starts about a decade earlier for low-income households.

It is important to note that this analysis has only considered pre-tax income, does not account for in-kind transfers (e.g. health insurance benefits), and does not examine assets or debts. We hope to consider these other important determinants of economic well-being in future briefs.

The Economic Security of American Households

Issue Brief One

Conclusion

Major changes in the economy - such as stagnating wages for less educated men, the rise of female labor force participation, and changing family structures - appear to have had profound effects on the economic circumstances of American households. Households at the bottom of the income distribution and in the middle of the distribution have made little or no economic progress relative to generations past. In contrast, affluent households have seen substantial gains in their standards of living. Economic gains over the past four decades have not been broadly shared.

In the coming months, we will explore income volatility faced by American families and how they view their own economic security. We will also examine the forces behind changing economic security, and how they have impacted Americans at various stages in the life cycle. We will look at the role of higher education in labor market outcomes, and how the changing financing of higher education is affecting young adults. We'll also look at how wealth and debt have changed over time, particularly in light of the Great Recession, and what that means for workers, those near retirement, and those who have already retired. Finally, we will look at the role of social insurance and the safety net in providing economic security in a rapidly changing economy.