

Date of draft: January 9 2007

# Transfers and the Economic Life Cycle in the US

Ronald Lee  
Demography and Economics  
University of California  
2232 Piedmont Ave  
Berkeley, CA 94720  
E-mail: rlee@demog.berkeley.edu

Gretchen Donehower  
Demography  
University of California  
2232 Piedmont Ave  
Berkeley, CA 94720  
E-mail: gretchen@demog.berkeley.edu

Tim Miller  
Demography  
University of California  
2232 Piedmont Ave  
Berkeley, CA 94720  
E-mail: tmiller@demog.berkeley.edu

Acknowledgements: Research for this paper was funded by a grant from the National Institutes of Health, R37 AG025247. The authors are grateful to Avi Ebenstein and Eric Schiff for their contributions.

## **The United States context**

### ***Demography***

US demography stands out among industrial nations due to its relatively high fertility and young population age distribution. The Total Fertility Rate has consistently been near 2.0 births per woman since the early 1980s, about a half birth higher than in the rest of the industrial world, and it has been relatively high throughout the past century, including during its striking baby boom when the TFR rose above 3.7. The generally high fertility has made the population relatively young, and the large baby boom, now on the verge of old age, has deeply shaped the population age distribution. Life expectancy in the US lags behind many industrial nations but has little effect on the population age distribution. While the US is home to many more immigrants than any other country, it is also a large population so the proportion of foreign born at 12%, although high, is not particularly striking in comparative context.

### ***Culture and Institutions***

The US is a pluralistic society given the substantial share of immigrants from regions with different traditions and values than those dominating in the US. However, the majority culture is individualistic as manifested in both private and public life. In private life, although extended families including the elderly were common in the 19<sup>th</sup> century, their prevalence declined throughout the 20<sup>th</sup> century and now elder coresidence is rare. Children, once finished with their education, are expected to establish their own households rather than continue to live in the parental home.

In the public sphere, there is an emphasis on individual self-reliance, and a fear of undermining it through need-based transfer programs. The notion of a social contract, which is widespread in Europe, is largely absent in the US. The tolerance for taxes and for income redistribution is much lower in the US than elsewhere. Big government is a constant concern. This has not, however, kept the US from accumulating a large public debt.

### ***Public Sector***

The US public pension system is called Social Security, which includes survivor's benefits and disability insurance in addition to pensions. Over 90% of the labor force is covered by Social Security. The average replacement rate is about .40 (value of benefit received divided by wage near retirement), with a progressive benefit formula. The benefit is adjusted for cost of living changes but not for productivity growth, so it is flat in real terms. The replacement rate is on the low side in the OECD context. For elderly people who do not qualify for Social Security and who are in poverty, a need-based program, Supplementary Social Insurance (SSI), provides a minimal stipend.

Perhaps the most distinctive feature of the entire public transfer system is Medicare, a publicly funded health insurance program for those age 65 and over. Part A is Hospital Insurance, Part B covers doctor visits outside the hospital, and Part C combines A and B but at certain managed care organizations. Part D, a new program not yet fully phased in,

provides coverage for the cost of drugs. Medicare is distinctive first in that it covers only the elderly population and second that it provides health insurance but does not provide services. It is an entitlement program with no caps or rationing.

Medicaid is a need-based health insurance program for people of all ages. Increasingly it is also used to pay for nursing home care for elderly people who satisfy the thresholds for assets and income.

Public education in the US is similar to many other countries through secondary school, but is perhaps unusual in the broad array of public colleges, universities, junior colleges and community colleges which provide subsidized opportunities for higher education for people with a wide range of abilities and backgrounds. Unlike some countries in Asia there is no practice of supplementing the public schools with a layer of private schooling. Instead, parents choose either the public school system or the private school system at each stage of their children's education. Currently, about 12% of all elementary and secondary enrollments are at private institutions, while about 20% of all undergraduates (post-secondary excluding graduate-level) attend private institutions (National Center for Education Statistics, 2005).

In recent years, the US government has run a large budget deficit resulting in a rapidly growing national debt which is now about 64% of GDP (OECD, 2005). This is in the top third among all OECD countries.

## Data

The data used as a basis for the estimates in this chapter come from standard public access sources: the decennial US census (conveniently accessible as public-use microdata through IPUMS); the Current Population Survey (CPS), a household survey conducted annually with an emphasis on labor and income; and the Current Expenditure Survey (CEX). These basic data sources are supplemented by other special surveys on medical expenditures, nursing home use, consumer finances, and so on. In addition, administrative data from Social Security and Medicare is frequently used. One common difficulty with many of the US data sources is that they do not cover the portion of the population that is in nursing homes (institutionalized). For medical expenditures this is a particularly serious problem.

We are fortunate that some of these data sources have substantial historical depth. Through IPUMS, micro-level census data are available back to 1850. The CPS provides continuous coverage since 1964. CEX, or similar surveys with varying coverage are available on an occasional basis all the way back to 1888, with annual coverage starting in 1980. With these data and a willingness to make assumptions, historical accounts can be constructed over the 20<sup>th</sup> century and beyond. Here we will focus on the most recent estimates (2003) while providing some comparative estimates for 1960 and 1981.

For labor income, the relevant data are available directly from surveys. On the consumption side, expenditures on education and health were allocated to family members by age using the regression methods discussed in the Methods chapter.

Administrative data were used for public education and public expenditures on health care.

## Consumption and labor income

Figure 1 plots total consumption, the sum of private expenditures and in-kind public transfers and services received, together with labor income including self-employment income and fringe benefits, before tax. Two striking points stand out. First is the near linear increase with age for consumption from the early 20s to the early 60s, followed by a flattening out over most of the retirement years with a strong exponential increase beginning in the early 80s. Consumption reaches a peak for 90+ year olds at \$51,000, about twice the consumption level of 20 year olds. In other countries, consumption is relatively flat across age. Second is the short span of ages in which labor income exceeds consumption, only for the 28 years between age 29 and 57. A surplus is produced during only 36% of the current life expectancy at birth of 78 years. This second feature of the age profiles turns out to be shared to varying degrees by all the countries we have seen, regardless of average levels of educational enrollment in the young adult ages and of old age support systems. There is some variation from country to country, but not as much as one might expect. To some degree the narrowness of the age span must arise from a methodological assumption to allocate all “other” government spending on a per capita basis to the entire population.

In Figure 1, the age profile for labor income appears somewhat irregular and tilted toward the older ages relative to a symmetric bell curve. One is tempted to view this shape as reflecting sampling variation, but comparison to adjacent years shows that the delayed peak earnings to around age 55 is real. Recall that this curve is an average across men and women, in the labor force or out of it, and so reflects participation, hours, and hourly earnings. We will consider this shape further below. For now, we just note that this kind of labor income curve, resembling a bell curve that has been pushed to the right, is also seen in some other industrial countries.

Figure 1 shows only the bare age profile of consumption and labor income, and it is interesting to examine in more detail the different components of each. Figure 2 provides detail on the composition of consumption. At the bottom of the plot we see a horizontal line showing the equal allocation of public expenditures that are not targeted by age, including such items as military spending, government funded research, roads, public buildings, police and fire protection, foreign embassies, and the operating costs of government. Next we see private “other” which is all private spending except for health, education and durables. Focusing on the combined expenditures on other and on durables, both of which are allocated within households based on equivalent adult consumer weights, we see that for these items, consumption rises until around age 60 and then declines. Private health expenditures rise gradually with age, but declines after age 65 (as Medicare insurance coverage begins) before rebounding sharply at the end of life as many elderly must pay for nursing home care from private funds. But even after adding on private health, overall private consumption rises until age 60 and then continues to decline until late in life. Medicare and Institutional Medicaid do not cover all health care expenditures by the elderly; substantial out of pocket costs remain. With

the advent of Medicare Part D in 2006, a large proportion of pharmacy costs were covered, so private health spending at older ages may be less prominent in more recent profiles. The last component of private consumption is private education, and this appears on the figure as a thin wedge which is thickest for the pre-school years up to age five and for elementary school, and again for the years of higher education after age 17. Overall private educational expenditures are quantitatively unimportant in the US relative to many other countries such as Japan, Taiwan, S. Korea or Brazil.

Only in-kind public transfers appear on Figure 2. Any effect of income transfers such as pensions is indirect, and will be considered later. Public education looks as one would expect: a substantial quantity stretching from ages 5 to 21, and then tapering off but continuing to reflect publicly funded graduate education as well as returnees to the educational system at later ages. The striking feature of public in-kind transfers is health care, including long term care. Although some health care is provided before age 65 to people with disabilities and to the poor, starting at age 65 expenditures grow rapidly at a pace that is enough to offset declining private consumption expenditures and keep total consumption relatively flat in the early years of retirement and leads to a near exponential increase in consumption at the end of life, reflecting the increasing use of publicly funded nursing home care.

With this background, the unusual and perhaps unique age pattern of consumption in the US arises from a combination of public and private components. Why might private consumption rise so strongly in the US, in contrast to other countries? This may be due partly to the decline in elder co-residence throughout the 20<sup>th</sup> century, a decline shared by most industrial nations. Older people may have accumulated wealth over their life cycles both as assets and as pension wealth. When they live apart from their children and grandchildren it is perhaps easier for them to consume this wealth themselves rather than sharing it. The stock market run-up of the 1990s and housing price inflation will have boosted their wealth holdings. The individualism to which we alluded earlier could explain why US elders share less than their counterparts in other industrial nations – if indeed they do share less, which would be an interesting topic for investigation. On the public side, we have no explanation for why historically public health insurance has been skewed toward the elderly, but that skew certainly contributes strongly to the US consumption pattern.

Figure 3 decomposes labor income into earnings, benefits, and self-employment income. Benefits are an important component, and self-employment contributes a smaller share to the total.

## **Changes since 1960**

How did consumption by the elderly in the US come to be so great relative to younger ages? Figure 4 compares the shape of the age profiles for 1960, 1981, and 2003. Consumption in 1960 was quite flat between age 20 and 60 and then declined strongly. This pattern looks much more like that in other countries today, although the decline after age 60 is unusually strong. In 1981 the age pattern has changed, and now we see consumption about a third higher at age 60 than at 20, after which it stays flat until

sharply rising in the 80s.

When we look more closely at the changing components, what stands out most strongly is the growing consumption of both private and publicly funded health care at the older ages. To a lesser degree one sees that the decline with age of private other consumption becomes increasingly weak between 1960 and 2003.

The changes in labor income shown by Figure 5 are also interesting. There has been a clear decline in the importance of self-employment income since 1960, and an equally clear increase in the importance of benefits which particularly accrued to older workers. The decline in retirement age is also apparent. In 1960 there were much more substantial earnings after age 60 than in 2003. Less obviously, the income of older workers has increased relative to that of younger workers.

## **Changing average ages of consuming and of receiving labor income**

The average age at which a dollar is consumed or received as labor income is a convenient summary measure of central location. This average age depends both on the shapes of the age profiles and on the population age distribution used as weights. For present purposes we will hold constant the population age distribution used as weights so that we can isolate the effects of changing shapes of the age profiles. Figure 6 plots the result from 1960 to 2003. We see that the average age of consumption rose considerably which was expected, since we know that the skew of consumption toward older ages had greatly increased during this period as discussed earlier. The pace of increase notably slows around 2000 and then appears to reverse direction, which is surprising and requires investigation. Is this a reflection of the stock market crash in 2001? However, the big surprise is that the average age of labor income increased even more so that the difference in average ages grew larger.

What could account for the rising average age of labor income? It is well known that the age of retirement of men ceased its downward trend in the early 1980s and that retirement ages actually increased slightly, but that increase has been far too small to account for a strong trend like this one. To gain some insight, we did a decomposition analysis of the change in average age for each year-to-year time segment, considering each of these factors: the population age and sex distribution and sex-specific labor force participation and earnings per participant. The result is shown in Figure 7 as the cumulated single-factor effects from the beginning of CPS data availability in 1962. Note that population age-distribution change is now included in the analysis, in contrast with the results shown in Figure 6. Although the age distribution component would have generated considerable change over the 43 year period, that change follows a U trajectory that ends up where it started, and so accounts for a net rise in the average age of close to zero between 1962 and 2003. Only the component for men's earnings shows a strong and continuing trend, and it alone accounts for an increase of 2.4 years, nearly the total amount.

Evidently earnings of older male workers have been rising more rapidly than those of younger workers, causing the tilt to the right of the labor income age profile we noted

earlier. Why might older males be doing so well in the labor market relative to their position in 1960? Three possibilities come to mind. First, globalization and particularly immigration might be reducing earnings of younger workers more than older ones. Second, the older workers of today may be more highly educated compared to younger workers today than was the case in 1962. This requires further investigation. Third, retirement at older ages may have become more selective of those with lower earnings, so that those who remain at work have relatively higher incomes now than in the past. But this would not lead to a rise in the average age of earnings, so it can be discarded as a possibility.

## **Mechanisms and Institutions**

Forthcoming.

Figure 1. Total consumption (private plus public) and labor income, 2003.

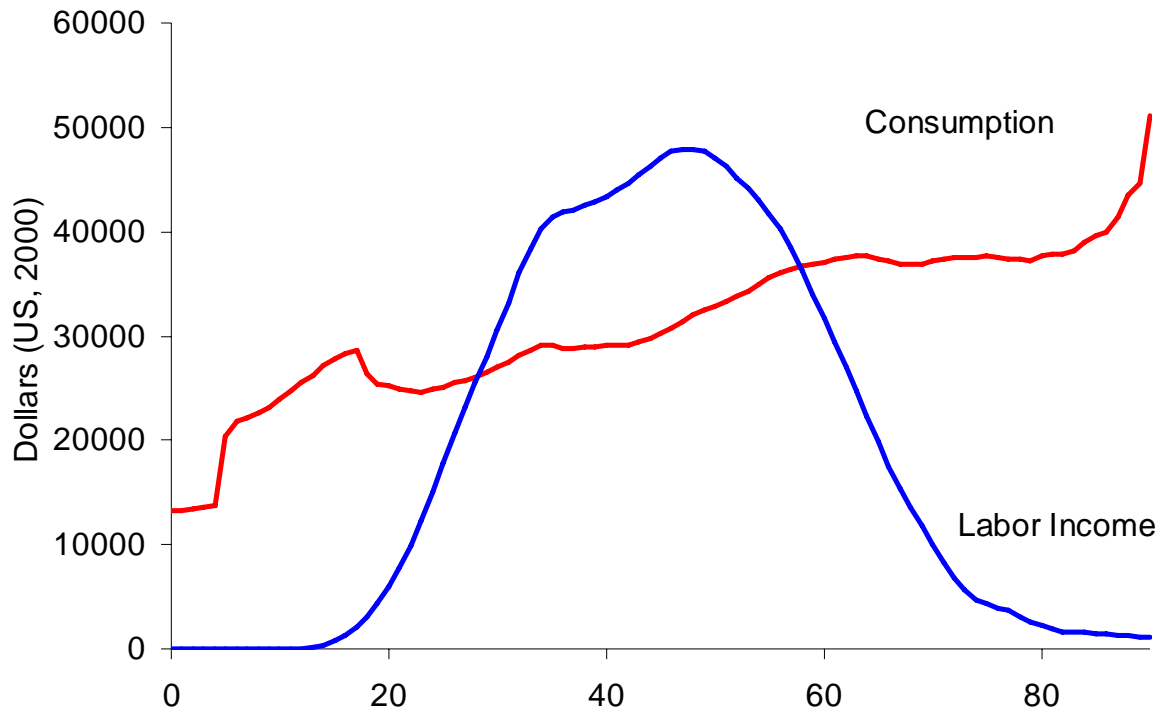




Figure 2. The composition of US consumption, 2003.

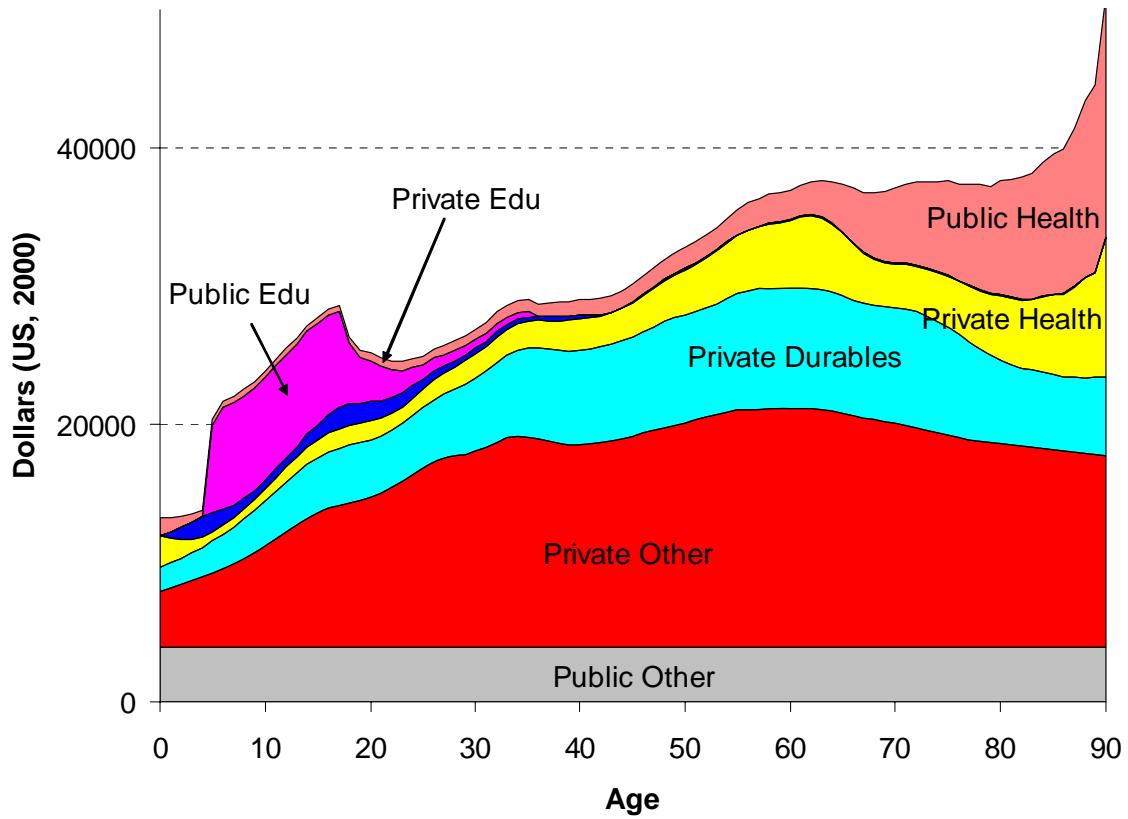


Figure 3. The composition of US labor income, 2003.

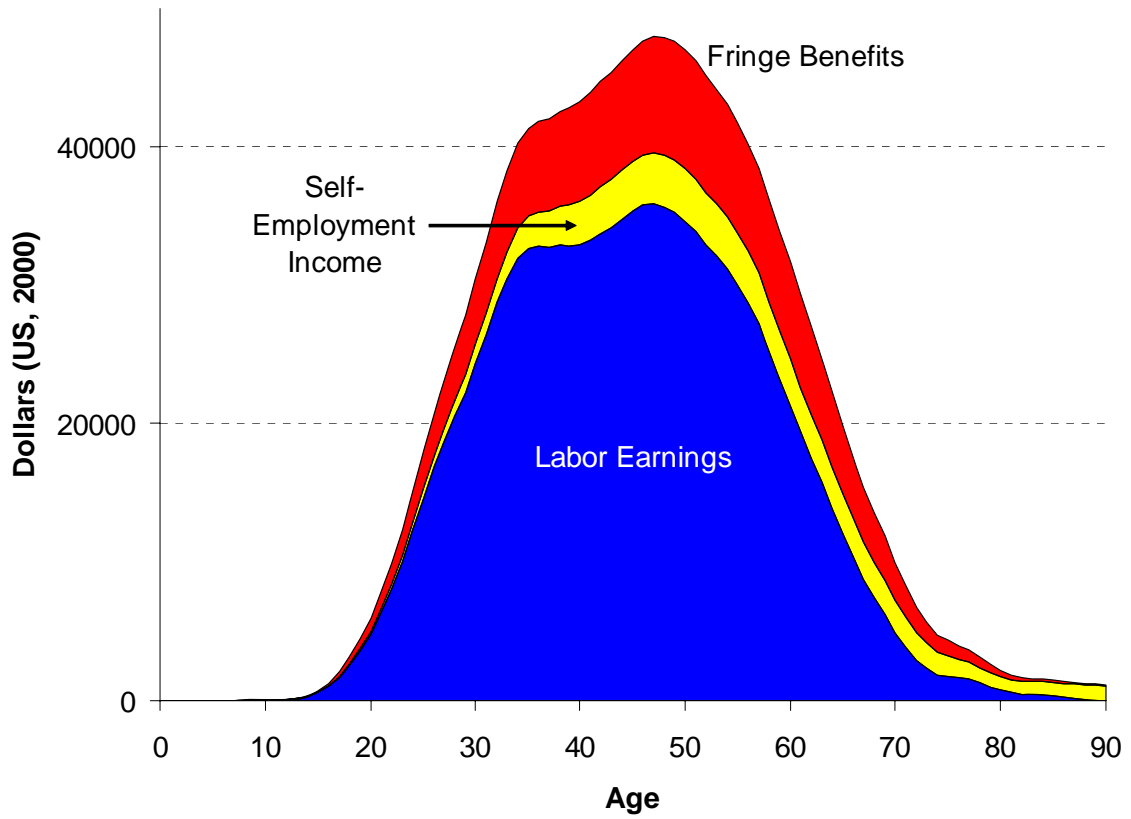
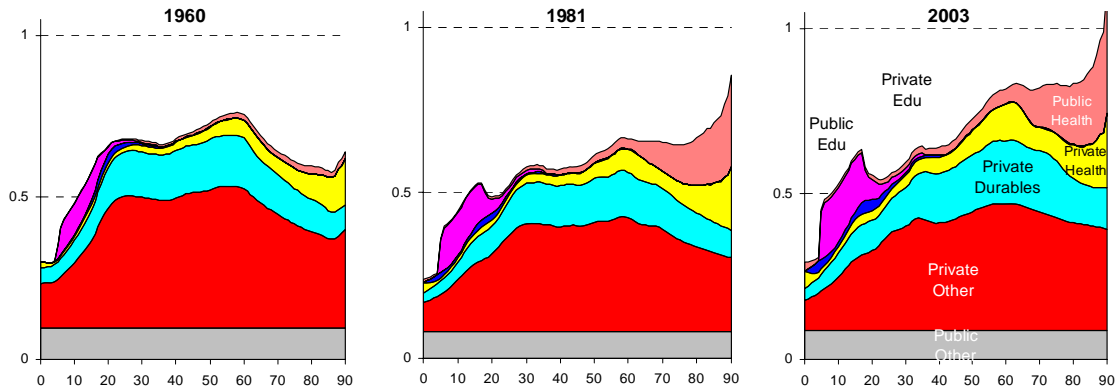
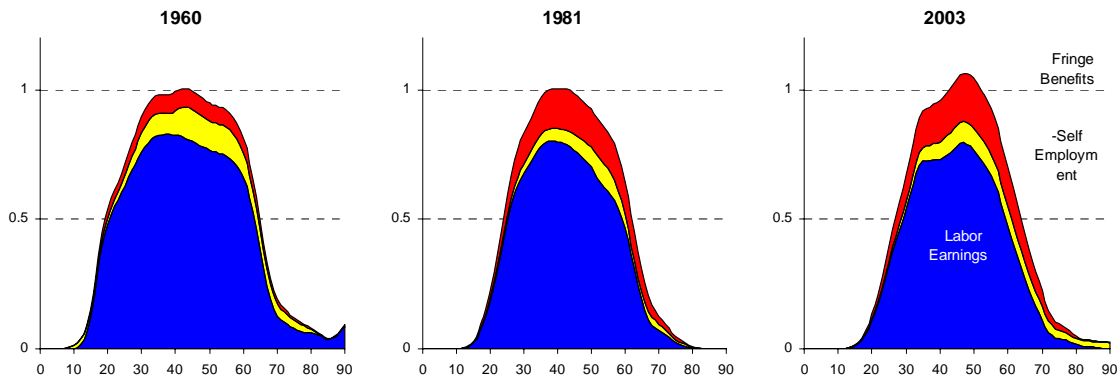


Figure 4. The changing shape of total consumption, 1960, 1981 and 2003.



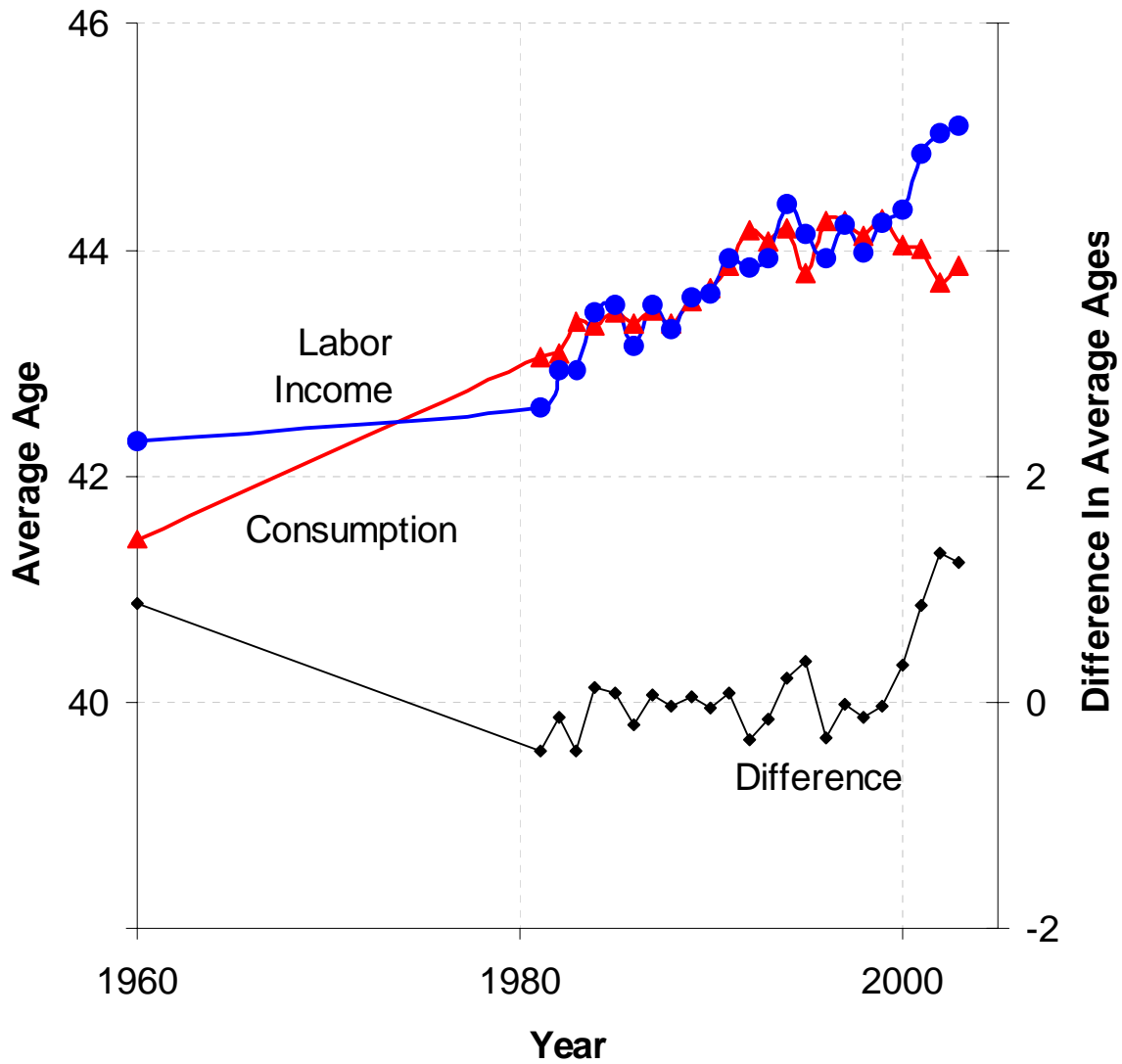
Note: Amounts are shown relative to the average labor earnings of 40-45 year olds for that year.

Figure 5. The changing shape of labor income, 1960, 1981 and 2003.



Note: Amounts are shown relative to the average labor earnings of 40-45 year olds for that year.

Figure 6. Trends in Average Age of Labor Income and Consumption holding population weights constant



Note: Population age distribution is held constant for these average ages. The population used is a constructed stationary population based on the observed life table in 1980 (Human Mortality Database).

Figure 7. The effect on the average age of labor income of varying one factor at a time while holding others constant at their mean values, 1962-2003.

