1999

Sources Of Income Inequality Among the Elderly

Jing Jian Xiao
University of Rhode Island, xiao@uri.edu

Y. Lakshmi Malroutu

See next page for additional authors

Citation/Publisher Attribution
Xiao, J.J., Malroutu, Y.L. & Yuh, Y. (1999). Sources of income inequality among the elderly. *Financial Counseling and Planning*, *10*(2), 49-59. Retrieved from http://afcpe.org/journal-articles.php?volume=112&article=66
Available at: http://afcpe.org/journal-articles.php?volume=112&article=66

Sources Of Income Inequality Among The Elderly

Jing J. Xiao[1], **Y. Lakshmi Malroutu**[2] and **Yoonkyung Yuh**[3]

Sources of inequality among American households with a retired elderly head were examined by decomposition of Gini coefficients. Inequality of investment and labor income contributed most to overall income inequality. Income inequality of three types of households -- couples with one retiree, retired couples, and retired singles -- were studied in terms of sources of income inequality. Inequality of investment income contributed most to income inequality for retired singles and for retired couples.
Key Words: *Income inequality, Gini coefficients, Retirement, Survey of Consumer Finances*

Introduction

The uncertain future of the Social Security system and the trend of private pension moving from defined benefit plans to defined contribution plans require workers to assume more responsibility for their retirement finances. Many workers have opportunities to save and invest in defined contribution pension plans, such as 401(k) plans and they have to decide when to start saving and how to invest. The timing for starting to invest for retirement has profound implications for the accumulation of retirement wealth (Hanna & Chen, 1997; Poterba, Venti & Wise, 1998). Many factors affect workers' participation in, contribution to, and investment in defined contribution pension plans (Sung & Hanna, 1998; Yuh & DeVaney, 1996; Xiao, 1997, 1999). One way to examine the consequences of the saving and investing behavior of workers is to look at their financial resources after retirement. This study examines income inequality among retired households, which will shed light on retirement saving behavior among workers. In addition, knowledge of income inequality among retired households will provide financial counselors and planners background information as they help their clients save and invest for a comfortable retirement life.

Although real household income in the U.S., on average, has grown in the 1980s, the Census Bureau reports that income inequality has increased as well. One out of three elderly households is in the lowest quintile of the national income distribution (Ryscavage, 1992). In addition, the amounts of income and wealth of elderly households are more heterogeneous than their younger counterparts (Gustman & Juster, 1996). Income inequality in the retired population can be a potential social issue in the future when social insurance systems may move towards a direction that requires more individual responsibility. Some proposals for Social Security reforms advocate privatizing the system and letting workers take care of their own retirement security. The private pension system is moving from defined benefit plans to defined contribution plans that transfer market risks from employers to employees. Some studies indicate that the rich-poor gap in 401(k) plans, a typical defined contribution retirement plan, has widened in terms of plan participation and contribution (Schultz, 1997). The future is difficult to predict but current trends could further increase disparities of income and wealth among retired households. It will be of interest for public policy makers and professionals working for the elderly to examine major income sources among retired households that contribute to income inequality.

The purpose of this study is to examine income inequality among retired households. This study examines three types of households, couples with one retiree, retired couples, and retired singles. The methodology is the decomposition of the Gini coefficient developed by Lerman & Yitzhaki (1984). This approach not only allows for the examination of the overall income inequality measured by Gini coefficients, but also explores to what extent each of the income sources contributes to total income inequality. The findings will have implications for financial service professionals, educators, and policy makers.

Literature Review on Economic Inequality

1. *Jing J. Xiao, Associate Professor, University of Rhode Island, Department of Human Development and Family Studies, Quinn - CHSS, Kingston, RI 02881. Phone:401-874-4036. Fax: 401-874-2581. E-mail: xiao@uri.edu*

2. *Y. Lakshmi Malroutu, Associate Professor, Queens College, CUNY, Department of Family, Nutrition, & Exercise Sciences, Flushing, NY 11367 Phone:718-997-4159. Fax:718-997-4163 . E-mail: lma$heco@QC1.QC.EDU*

3. *Yoonkyung Yuh, Lecturer and Post-doctoral Rresearcher, Department of Consumer Science and Human Development , Ewha Womans University, Seoul, Korea. Phone:016-238-6411 . Fax: 822-2124-4166 . E-mail: yoonkyung17@hanmail.net*

Acknowledgment: We are grateful to Thesia Garner, U. S. Department of Labor, for providing the SAS code for calculating the decomposition of the Gini coefficient. We appreciate helpful comments on earlier versions of this paper from Sherman Hanna and three anonymous reviewers, and session participants at the 1998 Annual Conference of Association for Financial Counseling and Planning Education.

Economic Inequality of the General Population

There are numerous studies on income inequality but only selected studies are reviewed here to provide an outline of the issues. Several studies analyzed and discussed possible causes of the increase in income inequality. According to Gottschalk & Smeeding (1997), since the mid 1970s factors such as rising earnings inequality among men and two-earner households and the increase in the number of single individuals and single female headed households contributed to the increase in inequality in the whole population. Karoly and Burtless (1995) attributed much of the rise in household[a] income inequality to increase in inequality in male earnings and gains in wives' earnings in households with high incomes, while Cancian, Danzier, and Gottschalk (1993) concluded that most of the increase in household income inequality reflected increases in male earnings inequality.

Maxwell (1990) analyzed the Current Population Survey (CPS) from 1947 to 1985 to estimate the relationship between economic, demographic and policy changes and income inequality and distribution. Aggregate income inequality was less in 1985 than in 1947, but income inequality had increased since the 1970s as income distribution became more polarized due to decreased proportion of manufacturing employment, increased proportion of female-headed households and increased number of baby boomers. Since income and age have an inverted U relationship (income is lowest at young and old ages), an increase in the proportion of the young and elderly increases income inequality. The inequality increase would have been greater but both increased female labor force participation and increased social-insurance expenditures equalized the income distribution.

The Gini coefficient, a conventional measure of economic inequality, indicated a decline in household income inequality of 7.4% from 1947 to 1968. From 1968 to 1994, there was a 22.4% increase in income inequality (Weinberg, 1996). From 1979 to 1993, household income inequality rose with the effect of the 1981-82 and 1990-91 recessions hastening the trend toward greater inequality. In the last two decades, household income growth has stagnated and incomes have become more unequally distributed. The real incomes of the bottom 60% of American households were lower in the early 1990s than at the end of the 1970s (Danzier & Gottschalk, 1995). Using 1980 Census data, Abdel-Ghany (1991) found that household income in the South is less equally distributed than that of the U.S. as a whole.

Lerman and Yitzhaki (1985) used the 1981 CPS to analyze the marginal impact of different income sources on overall income inequality by decomposing the Gini coefficient. The results indicated that the earning capacity of households had a larger effect on income inequality than other income sources such as property income.

Economic Inequality in Older Population

Economic inequality among the older population was studied by several researchers both in the U.S. and in other countries. Osberg (1991) described economic inequality as the analysis of differences across the population in access to and control over economic resources. The large differences in economic well-being within the elderly population stem from differences in incomes, net worth, savings behavior, pension, and social security benefits.

Danzier and Gottschalk (1995) used U.S. Bureau of Census data to chart median income and poverty rate trends of the elderly. They found that the poverty rate for the elderly has continued to fall since the 1970s because of increased government spending, rather than because of economic growth. Between 1973 and 1991, households headed by the elderly fared better than the population as a whole in terms of income. By 1991, the mean adjusted income for this group was 2.68 times the poverty line. The property income of households headed by elderly persons rapidly increased, both absolutely and as a share of their total income. Over the 1973-1991 period, growth in government transfers accounted for about two-thirds of the increase in income of the elderly, while growth in property income and in other sources (primarily private pensions) accounted for the rest of the increase (Danzier & Gottschalk, 1995).

Smeeding (1991) used the Luxembourg Income Study (LIS) from 1979-83 to compare the overall disposable personal income inequality across 10 countries and found disposable personal income has the highest degree of inequality in the U.S., followed by Australia and Canada. Other factors affecting income inequality were health status, age, gender, marital status, and education. When poverty rates were compared, older couples had lower average poverty rates than single elderly persons living alone. And the younger elderly (65-74 years), both couples and singles, had lower poverty rates than the oldest who were 75 years or older (Smeeding, 1991). Deaton and Paxson (1998) explored the relationship

between age and inequality in health status using the 1983-94 National Health Interview Survey (NHIS). Substantial evidence was found to indicate that measures of health status become more widely dispersed within any given birth cohort as that cohort aged.

Slottje (1989) used the CPS March file from 1947 to 1984 and found that measured earnings inequality among education levels was significantly narrow for older women compared to women under age thirty. Specifically, measured earnings inequality for the two younger age groups (under age 30 and 30-59 years) was lowest among college graduates, the inequality for females aged 60 and over with college degrees was equal to that for those with high school diplomas. Thus, higher educational attainment among women aged 60 and over did not decrease their measured earnings inequality. Schwenk (1992) used the 1988-89 Consumer Expenditure Survey data to analyze the income and expenditures of widowed, divorced, and never-married older women. Although the three groups differed in their sources of retirement income, Social Security contributed to more than half of their income.

Retirement Income Inequality

McGarry and Davenport (1998) investigated whether pensions increase or decrease inequality in the wealth of households approaching retirement. They used the Health and Retirement Study (HRS) to conclude that pensions somewhat increase wealth inequality but found no evidence that pensions crowd out private savings. In demonstrating the relationship between total wealth and inequality directly, they found that single women fare much worse relative to single men and couples when pension wealth was included in the calculation of total wealth. Using data from the 1995 Survey of Consumer Finances (SCF) Kennickell and Sundén (1997) found that including pensions and Social Security in net worth increased the equality of the distribution of net worth.

The studies reviewed in this section documented the trend of economic inequality in the U.S. and explored factors associated with it. However, no study focused on retired households in terms of sources of income inequality, which is increasingly important because of the current trends of demographic changes and possible Social Security and pension reforms. This study attempted to fill this research gap to explore the income sources that are relatively more important to the well being of retired households and to income inequality among retired households.

Method

Data and Sample

Data used in this study were from the 1995 Survey of Consumer Finance. The survey was sponsored by the Federal Reserve Board and the data were collected by the National Opinion Research Center at the University of Chicago (Kennickell, Starr-McCluer, & Sundén, 1997). In the original data set, 2,780 households were from the area-probability sample and 1,519 higher income households were from the tax record list. For the purpose of this study, households with heads who were 65 years or older were included. Households with two working spouses were excluded from the study and the sample was further restricted to two-person households for couples and one-person households for singles to remove effects of income contributed by adult children in a household. The sample was further divided into three groups by household type, (1) couples with one retiree (n1=192), (2) retired couples (n2=268), and (3) retired singles (n3=245). The total sample size included in the analyses was 705. Among the retired singles, 77% were females and 23% were males.

There are some difficulties in defining and measuring retirement status perfectly. First, retirement is a process that lasts over a period of time. Second, some people who claim they are retired may still work part time or occasionally. The retirement status in this study was based on respondent's self-reported work status which included self-claimed retirees who still work part time or occasionally or people who retired during the middle of the survey year.

Since the original data set included five replicates, all of them were used in the data analyses following the procedure described by Rubin (1987). The details about the five replicates can be found in Kennickell (1997). Data analyses were conducted based on the weighted sample using the weight variable provided by the Federal Reserve Board. Since this study focused on households and the original data were collected in a household unit, we used the household as the unit of analysis. Thus no further personal weights were used in the analyses.

Income Sources Variables

Based on the SCF codebook, the following income source variables were included: (1) wages and salaries; (2) professional practice, business or farm; (3) non-taxable investments such as municipal bonds; (4) other interest income; (5) dividends; (6) sale of stocks, bonds, or real estate; (7) net rent, trust income, or royalties; (8) pension income; (9) Social Security income

for the respondent; (10) Social Security income for the spouse; (11) all other income, including unemployment or worker's compensation, child support or alimony, welfare income, and others (Kennickell, 1997). Total income was the sum of income source (1) to (11). Total Social Security income was the sum of (9) and (10). Total retirement income was the sum of (8), (9), and (10). Using after tax income could describe income inequality more accurately, but this study used before tax incomes since income tax information was not available from the data set. This limitation is somewhat mitigated by the fact that the elderly usually have lower tax brackets.

To count household size effect, the adjusted income was used for all income categories. As Gottschalk and Smeeding (1997) discussed, the following formula of the adjusted income is commonly used in economic literature:

$$\text{Adjusted Income} = \text{Income} / (\text{Household Size})^{E} \qquad (1)$$

where E could range from 0 to 1. If E is 0, no adjustment is made. If E is 1, the household income becomes per capita income. Like many empirical studies, this study used E=.5, assuming a moderate level of the economies of scale (Gottschalk & Smeeding, 1997).

Decomposition of the Gini Coefficient

The Gini coefficient is a conventional measure describing the inequality status of incomes or expenditures among a population. Gini coefficients are traditionally calculated with grouped data. Since this approach tends to smooth fluctuations in inequality and has a downward bias, estimating the Gini from individual data is recommended whenever possible (Lerman & Yitzhaki, 1989). This study calculated Gini coefficients based on individual data. In addition, the Gini decompositions describing income distributions among American retired households were also computed.

The approach to decomposing the Gini coefficient was developed by Lerman and Yitzhaki (1984, 1985) and Yitzhaki (1983).

There are three advantages of using this approach. First, this approach uses individual rather than grouped data, which results in more accurate estimates. Second, this approach is insensitive to the order in which the contribution from each component is measured. Third, this approach can explore relative contributions of incomes from different sources to the inequality of total income (Garner, 1993). This approach has been used to investigate the inequality of consumer incomes and expenditures in the U.S. and other countries (Garner, 1993, 1998; Lerman & Yitzhaki, 1985).

According to Lerman and Yitzhaki (1984), the overall Gini is defined as:

$$G = 2\,\mathrm{cov}(X, F) / m \qquad (2)$$

Where, G = Gini coefficient, X = total income, F = cumulative distribution (frequency) of X, $\mathrm{cov}(X, F)$ = covariance between X and F, m = mean of X. If there are k components of total income (income from k different sources), the overall Gini can be decomposed (Lerman & Yitzhaki, 1984) as shown in Equation 3, where, $\mathrm{cov}(x_k, F)$ = covariance between income k and cumulative distribution of total income, $\mathrm{cov}(x_k, F_k)$ = covariance between income k and cumulative distribution of income k, m_k = mean of income k, m = mean of total income.

$$G = \sum_{K=1}^{K}\left[\frac{\mathrm{cov}(x_k, F)}{\mathrm{cov}(x_k, F_k)} \cdot \frac{2\mathrm{cov}(x_k, F_k)}{m_k} \cdot \frac{m_k}{m}\right] = \sum_{K=1}^{K} R_k G_k S_k = \sum_{K=1}^{K} C_k \qquad (3)$$

Table 1
Percent of Households with Income Sources, by Household Type

	Total sample	Couple with 1 retiree	Retired couple	Retired single	p-value of X^2 test
Labor income	20	94	10	8	0.001
wage and salaries	17	83	7	7	0.001
professional practice, business or farm	5	17	4	2	0.001
Investment income	58	59	63	53	0.038
non-taxable investment	11	15	14	7	0.002
other interest income	44	47	51	38	0.005
dividends	26	32	29	22	0.053
sales of stocks, bonds, or real estate	10	14	12	7	0.032
net rent, trust income, or royalties	9	17	9	7	0.008
Retirement income	96	95	98	96	0.213
Social Security benefits	92	88	94	92	0.204
pension income	45	44	54	38	0.001
Other income	12	11	10	13	0.423

Weighted Sample from the 1995 Survey of Consumer Finances.

In the decomposed Gini coefficient, R_k is defined as the Gini correlation between the income component k and the rank of total income (the relative location of a household in the sample when the sampled households are ranked by income levels in the computation), G_k is the Gini of income component k or factor Gini, S_k is income component k's share of total income. The product of R_k, G_k, and S_k is C_k, which is defined as contribution to total inequality. The higher the value of each factor, the greater the contribution of the income component to total inequality.

In addition, the share of inequality from an income component is defined as follows:

$$I_k = R_k G_k S_k / G. \quad (4)$$

This statistic represents an income source's contribution to income equality in absolute terms. Finally, using I_k and S_k, an additional measure for relative contribution to inequality is formed. The measure, relative income inequality, I_k / S_k , implies that income component k contributes more or less than its share to total inequality. For example, $I_k / S_k > 1$ means that income component k contributes more than its share to total inequality. In addition, the measure has policy implications since the marginal change of income component k will change the status of total inequality. If $I_k / S_k < 1$, tax advantage policies may be imposed on this type of income to encourage the increase of the income, which results in a decrease of total inequality, holding all else constant.

In the findings and discussion section, focus will be on the three statistics related to Gini decompositions: factor Gini (G_k), share (%) of total inequality from an income source (I_k), and relative income inequality from an income source (I_k / S_k).[b]

Findings and Discussion

Descriptive Statistics

Descriptive statistics in terms of income sources by three types of households are presented in Table 1. Ten percent of retired couples and 8% of retired singles still reported having labor income. One possible reason is that some of these respondents worked during part of the survey year. Another possibility is that some respondents claimed they were retired but still worked part time or occasionally. Retired singles were less likely to have investment income than the other two types (53% versus 59% and 63%). In addition, there were variations in terms of owning various types of investments. Retired singles were less likely to own all types of investments compared to the other two groups, whereas, retired couples were more likely to have pensions (54% versus 44% and 38%).

Income levels from different sources are reported in Table 2. Couples with one retiree had greater income levels in labor income, investment income, and other income categories and also had more total income than retired couples and singles. For example, the average labor income of couples with one retiree was about 14 times as much as that of retired couples and about 26

times as much as that of retired singles. The total income of couples with one retiree was more than double that of retired couples and triple that of retired singles. The average retirement income of retired couples was only slightly higher than that of couples with one retiree, while the retired singles had the lowest level of retirement income.

The shares of income from different sources by household types are presented in Table 3. Wage and salary income accounted 4% of total income for retired couples and 2% for singles, which is small but cannot be ignored. Interestingly, investment income shares of retired couples and singles were 4-5 percentage points higher than that of couples with one retiree. Social Security benefits accounted for 57% of income for retired couples and 62% for singles, which demonstrates the importance of Social Security for the well being of these retirees.

Gini Coefficients and Their Decompositions

Gini coefficients and their decompositions for the total sample and for each type of household are presented in Table 4, column 2. The total Gini for the total sample was .58. For income components (G_k), labor income, investment income, and other income had higher Ginis, pension income had a moderate Gini, while Social Security income had the lowest Gini. The high Ginis were expected because of the zero values of several income components. In general, the greater the proportion of zero incomes, the greater is the size of the income component's Gini coefficient (Garner, 1993).

When the three household types were compared, the Gini coefficients and their decompositions showed several different patterns. Couples with one retiree had a greater total Gini than the other two groups (.61 versus .53 and .55). In addition, the component Ginis (G_k) were different for the three groups. In terms of labor income, couples with one retiree had a lower Gini than the other two groups, which was expected since there were many zero values in this category of income for the two latter groups. The Gini coefficients for Social Security income among retired couples was .34 and was .36 for singles, which implies that the distribution of Social Security income among retired singles was more unequal. The situation for the pension component was similar, with a Gini of .70 for retired couples, and .80 for retired singles.

Table 2
Mean Income Levels by Household Type

	Couple with 1 retiree		Retired couple		Retired single		p-value
	mean	*s. d.*	mean	*s. d.*	mean	*s. d.*	of F test
Total income	**57144**	***170412***	**24314**	***101901***	**19491**	***34265***	**0.0134**
Labor income	28700	*90931*	2090	*34862*	1075	*20918*	0.0001
wage and salaries	23180	*88067*	1326	*14320*	531	*1411*	0.0001
prof. practice, busi. or farm	5521	*19811*	764	*21074*	544	*20868*	0.104
Investment income	14290	*81763*	8104	*75675*	7315	*26209*	0.6495
non-taxable investment	2191	*7489*	895	*3480*	603	*5352*	0.0444
other interest income	2040	*3974*	1724	*19314*	1255	*3720*	0.8178
dividends	6721	*80079*	1806	*21326*	1728	*7110*	0.5986
sales of stocks, bonds, real estate	1527	*4381*	2574	*49560*	1876	*9979*	0.9469
net rent, trust income, royalties	1810	*5660*	1106	*12414*	1853	*18618*	0.7881
Retirement income	12616	*3378*	13807	*4219*	10802	*4448*	0.0001
Social Security benefits	7228	*1456*	8333	*2188*	7711	*2752*	0.0001
pension income	5388	*3189*	5474	*3543*	3091	*3289*	0.0001
Other income	1538	*6686*	313	*2615*	299	*1262*	0.0183

Weighted Sample from the 1995 Survey of Consumer Finances.

Table 3
Income Shares by Household Type

	Couple with 1 retiree		Retired couple		Retired single		p-value
	mean	*s. d.*	mean	*s. d.*	mean	*s. d.*	of F test
Labor income	0.44	*0.10*	0.04	*0.07*	0.02	*0.06*	0.0001
wage and salaries	0.39	*0.10*	0.03	*0.06*	0.02	*0.06*	0.0001
prof. practice, business or farm	0.05	*0.06*	0.01	*0.03*	0.00	*0.02*	0.0001
Investment income	0.10	*0.06*	0.14	*0.10*	0.15	*0.13*	0.0001
non-taxable investment	0.02	*0.03*	0.01	*0.02*	0.01	*0.03*	0.0084
other interest income	0.03	*0.02*	0.05	*0.05*	0.06	*0.07*	0.0003
dividends	0.02	*0.01*	0.04	*0.04*	0.04	*0.07*	0.0001
sales of stocks, bonds, real estate	0.01	*0.02*	0.02	*0.04*	0.02	*0.05*	0.4262
net rent, trust income, royalties	0.02	*0.03*	0.01	*0.03*	0.03	*0.07*	0.0051
Retirement income	0.45	*0.09*	0.80	*0.12*	0.77	*0.16*	0.0001
Social Security benefits	0.30	*0.07*	0.57	*0.15*	0.62	*0.18*	0.0001
pension income	0.15	*0.07*	0.23	*0.12*	0.15	*0.13*	0.0001
Other income	0.01	*0.03*	0.02	*0.03*	0.04	*0.08*	0.0001

Weighted Sample from the 1995 Survey of Consumer Finances.

Share of Total Inequality Investment income contributed 47% and labor income contributed 28% to total inequality in the total sample (Table 4, column 3). The patterns of the three household types were different in terms of the income component contribution to total inequality. For couples with one retiree, labor income contributed most (55%) and investment income component contributed second most (36%) to total inequality. Investment income contributed, 53% and pension income contributed 21% to total inequality among retired couples. For retired singles, investment income contributed most (58%) to total inequality and the next two major contributors were Social Security (17%) and pension income (16%).

Relative Income Inequality The measures of relative contribution to total inequality indicated that, for the total sample and each household type, labor income and investment income contributed more than their shares to total inequality, while pension, Social Security, and other income contributed less than their shares to total inequality (Table 4, column 4). For example, in the total sample, investment income contributed 43% and labor income contributed 45% more than their shares to income inequality. For couples with one retiree, investment income contributed more than 50% of its share and labor income contributed more than 16% of its share to income inequality. The other two household types have similar situations. Both labor and investment incomes contributed more than 40% of their shares to income inequality among retired couples and retired singles.

Comparison with the General Population
To gain more insights of sources of income inequality among retired households, we conducted similar analyses among households with heads in all age groups (Table 5). The overall Gini in the general population was .536, a little lower than .579, the Gini of the retired sample in this study, which is consistent with the previous studies that the elderly population had a more unequal income distribution than the whole population. In terms of factor Ginis, the obvious difference between the two groups was that wage and salary income had the highest Gini in the retired population but a lowest Gini in the whole population, which is understandable since only part of the retired people still have labor income. However, investment incomes of both groups had high Ginis and the whole population had a slightly higher Gini, which implies that the investment income may be an important source of income inequality in future retired households because of the long term consequences of investment participation and strategies. The two groups had a difference in terms of absolute contributions to income inequality. The whole population had labor income but the retired population had investment income as the largest contributor to income inequality. The patterns of relative income inequality were similar for both

populations: labor and investment income contributed more than their shares to income inequality, but the extents of relative contributions were different. For the retired population, both labor and investment income contributed more than 40% of their shares to income inequality. For the whole population, investment income contributed over 50% more than its share and labor income contributed only about 6% more than its share to income inequality. Once again, investment income played an important role in income inequality among the retired households.

Table 4
Income Inequality Effects of Income Components by Household Types

	1	2	3	4
Income Sources	% of Households with nonzero values	Factor Gini	% of income inequality	Relative income inequality
Total sample				
wage and salary	20	0.962	28	1.432
investment	58	0.910	47	1.453
pension	45	0.762	14	0.867
Social Security	92	0.352	9	0.308
other	12	0.978	2	0.905
total	100	0.579	100	1.000
Couple with one retiree				
wage and salary	94	0.761	55	1.160
investment	59	0.942	36	1.523
pension	44	0.787	6	0.638
Social Security	88	0.368	0	-0.020
other	11	0.998	4	1.454
total	100	0.614	100	1.000
Retired couple				
wage and salary	10	0.972	14	1.437
investment	63	0.899	53	1.438
pension	54	0.703	21	0.851
Social Security	94	0.340	12	0.306
other	10	0.983	1	0.885
total	100	0.527	100	1.000
Retired single				
wage and salary	8	1.083	8	1.416
investment	53	0.907	58	1.464
pension	38	0.796	16	0.939
Social Security	92	0.355	17	0.416
other	13	0.957	0	0.199
total	100	0.547	100	1.000

Weighted Sample from the 1995 Survey of Consumer Finances.

Conclusions and Implications

This study examined income inequality among retired American households with data from the 1995 Survey of Consumer Finances using Gini coefficients and their decompositions. Among households with heads who were 65 years or older and retired, investment and labor income contributed 47% and 28% respectively, to income inequality. In addition, there were differences among the three household types. For households with one retiree, labor and investment income were the major factors that contributed 55% and 36% respectively, to income inequality. For retired couples and singles, investment income contributed most 53% and 58% respectively, to income inequality. For retired singles, the other two factors that contributed to income inequality are Social Security and pension incomes.

In terms of relative income inequality, the total sample and the three types of households have similar patterns. Pension and Social Security incomes contributed less than their shares but labor and investment incomes contributed more than their shares to income inequality. However, the findings suggest possible further polarization of pension wealth in the future. If the private pension system continues to move towards defined contribution plans, more workers will assume responsibility to participate in, contribute to, and allocate funds to these self-directed retirement plans. Because of the diverse saving habits, attitudes, values, and levels of financial knowledge, it is possible that the accumulations of these plans could become more polarized. This is evident in the distribution of investment wealth today among workers at their retirement and pension income could contribute more to income inequality in the future.

Implications for Public Policies

Policy implications can be developed by considering Table 4, column 4, which indicates the relative contribution to total income inequality. If the statistic of an income component is less than one, it implies that this type of income contributes less than its share to income inequality. Public policies can be made to encourage the growth of this type of income, which would result in more equal income distribution, given other factors. Based on the findings of this study, pensions and Social Security incomes fall into this category. Public policies could help in reducing income taxes for pension and Social Security incomes and encourage private industries to provide more savings and investment opportunities for

their employees. Public policies moving in this direction should be encouraged and supported, as was done with the Small Business Job Protection Act of 1996. This law established a new type of pension plan, SIMPLE, for small business employees (Pension and Welfare Benefits Administration, 2000). Several legislative proposals providing more pension opportunities for workers are also being discussed in Congress (Hinz & Turner, 1998). Another major finding of this study is that investment income contributed more than its share to income inequality among the retired households. It is a debatable issue whether we need to use tax tools to equalize incomes among retirees but we should be aware that in the future income inequality could increase among retirees because of current pension trends that result in diverse investment incomes after retirement.

Table 5
Income Inequality Effects of Income Components in the General Population

	1	2	3	4
Income Sources	% of Households with nonzero values	Factor Gini	% of income inequality	Relative income inequality
wage and salary	80	0.623	80	1.057
investment	53	0.985	18	1.558
pension	14	0.913	3	0.661
Social Security	24	0.821	*	-0.085
other	20	0.960	*	0.069
total	99	0.536	100	1.000

* < 1%

Implications for Financial Service Professionals and Educators

This study has identified income sources that contribute more to income inequality among retired households and differences in three types of retired households. These findings can be incorporated in personal finance and household economics courses. College students and young adults can be encouraged to start saving and investing as soon as they enter the workforce and not wait until their pre-retirement years to accumulate savings for retirement income. In addition, one of the major findings of this study is that investment income is an important source of income inequality, which may result from differences in financial planning and investment years before retirement. Different investment strategies and choices in the long term will have significant consequences. Hanna and Chen (1997) suggested that all young workers should have retirement portfolios consisting of 100% stocks. Workers who are too cautious in their portfolio choices will be much worse off than those who choose to contribute to retirement accounts and pick stock funds.

From an individual's perspective, investment income should be considered as one of the important retirement income sources, especially at the current time when the Social Security system is insecure and private pensions are moving from defined benefit plans to defined contribution plans. Some Social Security reform proposals require that individuals take care of their retirement savings. Many defined contribution plans ask plan participants to choose their own investment instruments. Disparity of income from investment sources is expected to grow wider, which implies greater income inequality among retirees in the future. Thus, helping individuals know investment basics is becoming an increasingly important task. Financial service professionals and personal finance and family economics educators now face new opportunities and challenges to promote savings and investment mentality and habits and to teach effective investing strategies so that households may have a financially secure retirement.

Directions for Future Research

The topic of this study could be expanded in several directions. This study only investigated current income sources that contributed to income inequality. Future research could consider other potential income sources such as housing wealth. The current trends of demographic changes and possible Social Security and pension reforms may further polarize economic well being among the elderly. Additional research using more recent data from the Surveys of Consumer Finances or other nationwide data sets is needed to further explore the impact of these trends on inequality among the elderly.

Endnotes

a. *According to the Census Bureau, the terms "household" and "family" are defined differently. A household includes people who live in a housing unit, while a family includes people who live in a housing unit and are related by marriage, blood, or adoption. A household could include more than one family or unrelated individuals (U.S. Bureau of Census, 1999). Not all households are families according to the Census definitions. Household income and family income are two different concepts. Some empirical studies have used one of the two concepts strictly according to the definitions of the Census Bureau, while others have used the two terms interchangeably. For instance, researchers at the Federal Reserve Board who designed the Survey of Consume Finances use*

the term "family" to include one person households. Nonetheless, the conceptual difference of the two concepts should be noted.

b. *This approach can also detect the effects of income taxes on income inequality (Lerman & Yitzhaki, 1994; Garner, 1998). However, because of data limitation, tax effects were not examined in the study. Considering the respondents in this study were people who were 65 years or older and usually in lower income tax brackets, the effects of income taxes on the income distribution in this sample should be minimal.*

References

Abdel-Ghany, M. (1991). Income inequality within the U.S.A.: With emphasis on the "South". *Journal of Consumer Studies and Home Economics*, *15*, 339-345.

Cancian, M., Danziger, S. & Gottschalk, P. (1993). Working wives and family income inequality among married couples. In S. Danziger & P. Gottschalk (eds.). Uneven tides: *Rising inequality in America*. (pp. 195-221). New York: Russell Sage Foundation.

Danzier, S. & Gottschlk, P. (1995). *America unequal*. New York: Russell Sage Foundation.

Deaton, A. & Paxson, C. (1998). Health, income, and inequality over the life cycle. In D. A. Wise (Ed), *Frontiers in the Economics of Aging*. Chicago: The University of Chicago Press.

Garner, T. I. (1993). Consumer expenditure and inequality: An analysis based on decomposition of the Gini coefficient. *Review of Economics and Statistics*, *80* (1), 134-137.

Garner, T. I. (1998). Changing welfare in a changing world?: Income and expenditure inequalities in the Czech and Slovak republics. In S. P. Jenkins, A. Kapteyn & B. M. S. Van Praag (eds.). *The distribution of welfare and household production* (pp. 286-317). Cambridge: Cambridge University Press.

Gottschalk, P. & Smeeding, T. M. (1997). Cross-national comparisons of earnings and income inequality. *Journal of Economic Literature*, *35*, 633-687.

Gustman, A. L. & Juster, F. T. (1996). Income and wealth of older American households: Modeling issues for public policy analysis. In E. A. Hanushek & N. L. Maritato (eds.). *Assessing knowledge of retirement behavior*. Washington, DC: National Academy Press.

Hanna, S. & Chen, P. (1997). Subjective and objective risk tolerance: Implications for optimal portfolios. *Financial Counseling and Planning*, *8* (2), 17-26.

Hinz, R. P. & Turner, J. A. (1998). Pension coverage initiatives: Why don't workers participate? In O. S. Mitchell & S. J. Schieber (eds.). *Living with defined contribution pensions: Remaking responsibility for retirement*. Philadelphia: Pension Research Council Wharton School of the University of Pennsylvania and University of Pennsylvania Press.

Karoly, L. A. & Burtless, G. (1995). Demographic change, rising earnings inequality, and the distribution of personal well-being, 1959-1989. *Demography*, *32*, 379-405.

Kennickell, A. B. (1997). Codebook for 1995 Survey of Consumer Finance. Washington, DC: Board of Governors of the Federal Reserve System.

Kennickell, A. B. & Sundén, A. E. (1997). Pensions, social security, and the distribution of wealth. Unpublished manuscript, Board of Governors of the Federal Reserve System.

Kennickell, A. B., Starr-McCluer M. & Sundén, A. E. (1997). Family Finances in the U. S.: Recent evidence from the Survey of Consumer Finances. *Federal Reserve Bulletin*,*83* (1), 1-24.

Lerman, R. I. & Yitzhaki, S. (1984). A note on the calculation and interpretation of the Gini index. *Economic Letters*, *15*, 363-368.

Lerman, R. I. & Yitzhaki, S. (1985). Income inequality effects by income source: A new approach and applications to the United States. *Review of Economics and Statistics*, *67*(1), 151-156.

Lerman, R. I. & Yitzhaki, S. (1989). Improving the accuracy of estimates of Gini coefficients. J*ournal of Econometrics*, *42*, 43-47.

Lerman, R. I. & Yitzhaki, S. (1994). Effect of marginal changes in income sources on U.S. income inequality. *Public Finance Quarterly*, *22* (4), 403-417.

Maxwell, N. L. (1990). *Income inequality in the United States, 1947-85*. New York: Greenwood Press.

McGarry, K. & Davenport, A. (1998). Pensions and the distribution of wealth. In D.A. Wise (Ed), *Frontiers in the Economics of Aging*. Chicago: The University of Chicago Press.

Pension and Welfare Benefits Administration (2000). Savings incentive match plan for employees of small employers: A small business retirement savings advantage. [WWW document]. URL http://www.dol.gov/dol/pwba/public/pubs/simple.htm [viewed June 26, 2000].

Poterba, J. M., Venti, S. F. & Wise, D. A. (1998). 401(k) plans and future patterns of retirement saving. A*merican Economic Review*, *88* (2), 179-184.

Osberg, L. (1991). *Economic inequality and poverty: International perspectives*. New York: M.E. Sharpe, Inc.

Rubin, D. B. (1987). *Multiple imputation for nonresponse in surveys*. New York: John Wiley & Sons.

Ryscavage, P. (1992). Trends in income and wealth of the elderly in the 1980's. *Current Population Reports*, P60-183, 61-69.

Schwenk, F. N. (1992). Income and expenditures of older widowed, divorced, and never married women who live alone. *Family Economics Review*, 5, 2-8.

Schultz, E. E. (1997, August 21). Rich-poor gap in 401(k) plans widens. *Wall Street Journal*, pp C1, C25.

Slottje, D.J. (1989). *The structure of earnings and the measurement of income inequality in the U.S.* New York: Elsevier Science Publishing Company Inc.

Smeeding, T.M. (1991). Cross-national comparisons of inequality and poverty position. In L. Osberg (Ed), E*conomic inequality and poverty: International perspectives*. New York: M. E. Sharpe, Inc.

Sung, J. & Hanna, S. (1998). The spouse effect on participation and investment decisions for retirement funds. *Financial Counseling and Planning*, *9* (1), 75-88.

U. S. Bureau of Census. (1999, June 25). Current Population

Survey (CPS) - Definitions and explanation. [WWW document] URL www.census.gov/population/www/cps/cpsdef.html [viewed June 26, 2000].

Weinberg, D. H. (1996). A brief look at postwar U. S. income inequality. *Current Population Report, 60*-191, 1-4.

Xiao, J. J. (1997). Saving motives and 401(k) contributions. *Financial Counseling and Planning, 8* (2), 65-74.

Xiao, J. J. (1999). Asset allocation in defined contribution pension plans and private savings. Report to U.S. Department of Labor.

Yitzhaki, S. (1983). On an extension of the Gini inequality index. *International Economic Review, 24*, 617-628.

Yuh, Y. & DeVaney, S. A. (1996). Determinants of couple's defined contribution retirement funds. *Financial Counseling and Planning, 7*, 31-38.

Back issues:

Financial Counseling and Planning

The Journal of the Association for Financial Counseling and Planning Education
Volume 9 (2), 1998

CONTENTS

For information about obtaining back issues, contact the AFCPE Executive Director, Sharon Burns.
Upper Arlington, OH 43221. Phone: 614-485-9650. Fax: 614-485-9621. Email: sburns@finsolve.com

