# Comparison of amount and proportion of each income component

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This paper addressed income distribution in the United States by comparing each income component among subgroups with 1995 Survey of Consumer Finances (SCF) data. The mean of household total income and its sources were compared across income quintiles and demographic sub-groups to estimate the relative importance of each income component. Both household money income and non-money income were included in measuring the total household income for the analysis.

This paper examines what is the major income source among sub-groups and shows the difference in the ratio of income compositions to total household income. It shows which income components are more significant than the others in measuring total income within groups using weighted multi-regression analysis for total income by income quintiles.

The result shows that wage and salary income, self-employment income (professional practice, business, or farm) and capital income (bonds, stocks, real estate, and any other investment income) are highly unequally distributed. On the other hand, income from social security, pension, or retirement programs are more equally distributed than the other components.

**Key word: Income distribution, income component**

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# I.    Introduction

Income is a common choice for measuring economic well being because it is one of the indicators of consumers' financial ability to purchase goods and services. Comparisons among families by current money income or total income are often used in distribution studies as crude approximation of economic welfare. In general, we measure poverty and inequality based on income. While measure of poverty focuses on the situation of the population below a certain poverty line, inequality is a broader concept that focuses on the distribution of income or expenditure over the entire population. It is defined as a measure of how the income or expenditure pie is divided among all members of society. The simplest way of measuring inequality begins with dividing the population into quintiles from the lowest income group to the highest income group and estimates the proportions of income that accrues to each level.

Actually total income as a measure of economic welfare includes every available resource and the real total income would be greater than the income given by measurable income. Clearly, the main components of total income would vary somewhat among subgroups. The degree of development, poverty and inequality change when different definitions and measures are used. Therefore, it becomes more important to understand the income structure or component in investigating household inequality and poverty (Leibbrandt, Woolard C, and Woolard I., 2000).

In general, the concept of total income is divided into two categories: money income, non-money income. Money income

represents the earnings established through market transactions while non-money income could be served without market transaction (Moon, 1997, Rogers & Gray, 1994, Smeeding, 1997). In addition, current income includes portions of additional and important resource flows and most current income measures include the value of cash transfer payments including government cash transfers. The system of taxes and cash and in-kind transfers has contributed a great deal to the maintenance of observed equality (Smeeding, 1977, Abdel-Ghany & Stephen, 2002).

Since the 1997-98 economic crisis in Korea, income inequality has been one of the most urgent issues in our society. However, previous research has focused on only Gini index as a macro level with available data sources[1] rather than a specific income component. Even though several studies estimated Gini index for each income component, they only compared the absolute Gini index for each component without considering the relative importance and proportion of each component. For instance, we can not say the contribution of wage income on income inequality is greater than the contribution of property income simply because the Gini index for wage income is greater than the one for property income. To investigate the degree of contribution of each component on income inequality, the proportion of each component should be considered as well as the Gini index itself.

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[1] Korea National Statistical Office publishes "Household Income and Expenditure Survey" and "National Survey of Household Income and Expenditure ". Korea Labor Institute publishes " Korea Labor and Income Panel Study"

This study provides understanding of the structure of income for households in the United States estimating the relative importance and proportion of income component in measuring total income across income quintiles and demographic sub-groups. In addition, the economic character and relative importance of income source affect which items must be taken into account if a true measure of income is to be obtained.

Both the much used household money income concept and the less frequently employed household non-money income definition serve as the household total income basis for this study. Especially, incomes in kind such as social security and private pensions, all of which are so relatively important as an income sources of household income, particularly among middle-aged and older people, are included in non-money income concept in this paper. However, measurement of total household income excludes the Medicare and Medicaid due to lack of available information even though they are important sources of household non-money income for the aged and low-income group.

## II.    Empirical Methods

The data are from the 1995 Survey of Consumer Finances, witch is conducted every three years to provide comprehensive information on finances of a representative sample of the United States households. No other study for the country collects comparable information on U.S families' financial characteristics including their use of financial

services. For the 1995 survey, 4,299 families were interviewed and they are the sample for this study.

The SCF income estimates the incomes of all family members based on before tax income. The study sample is divided by income quintile from the poorest to the richest. For the analysis of income quintile, the cut off point is determined by using weighted frequency distributions of income. The advantage of using weighted data is that any sample percentages calculated from the data are unbiased estimates of population percentages. Thus, it is recommended to adjust the data to generalize the population.

The official definition of income is not specified in law or regulation. In effect, what is included in income depends on the questions asked. While the SCF data contains detailed income sources, income in the form of Medicare, Medicaid was excluded due to lack of available information. In this study, following the SCF income variables are the income components included:

- i.   income from wages and salaries
- ii.   income from professional practice, business, or farm
- iii.   income from non-taxable investment such as municipal bonds
- iv.   income from interest
- v.   income from dividends
- vi.   income from net gains or losses from the sale of stocks, bonds, or real estate
- vii.   income from net rent, trusts, or royalties from any other investment or business
- viii.   income from unemployment and worker's compensation
- ix.   income from child support or alimony

    x.     income from ADC(Aid to Dependent Children), AFDC (Aid to Families with Dependent Children) , food stamps, or other welfare

    xi.    income from Social Security or other pension, annuities, or other disability or retirement programs.

Negative income group is separated from the first income quintile because the characteristics for the negative income group are very different from those of the lowest income group. The interviewees report net gain or losses from the sale of stocks, bonds, or real estate, which may result in negative incomes, even if they report income from other sources. Negative income may reduce the mean income level of the lowest income quintile if not separate from the lowest income quintile.

In comparing the mean and median within subgroups, for negative income group and the highest income group, the difference between weighted mean and median is so big. Considering this value, the income distribution within negative income group and the highest income group is more skewed than that of the other groups. Thus weighted mean value is employed to compare the proportion and amount of each income component.

The proportion and the amount of each income component is calculated according to the household total income quintile, age, education, and race of the head of household in order to compare the relative importance and the degree of inequality. Finally, to investigate the possibility that there may be different relationship between total income and each income component within each income group,

weighted multi-regression analysis [2] is conducted for each income quintile. The dependent variable is total household income and independent variables are every income component included in this study. Because both independent variables and dependent variable are continuous variable, the multi-regression analysis can be performed.

# III. Analysis And Results

## *Descriptive Analysis*

This section provides the result of descriptive analysis and the comparison of mean and proportion of each income source across income quintile and demographic subgroups. Table 1 is a good snapshot of the income level by demographic characteristics. As table 1 shows, the year of education that the head of household has taken is positively associated with the level of income. As the year of education increases, the proportion of higher income group is increasing. For the head of household with less than 6 years of education, they are likely to be included in the lower income group while, the head of household with over 16 years of education tends to be in the higher income group.

Considering the race and ethnicity of the head of household, the proportion of negative and lowest income group is the highest for the

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[2] To compare the effect of each component on the level of income (between groups), multinomial logit model or hierarchical logit can be also employed. This study focused on the relationship between each component and the total income within group.

Hispanic. The White is evenly distributed over different income level. For the Black, more than 50% are in the lowest and second income quintile compared to 36% for the White.

Table 1. Income levels by age, education, and race

(unit: percentage)

| | N-income | income 1 | income 2 | income 3 | Income 4 | income 5 |
|---|---|---|---|---|---|---|
| Race B | 0.7 | 26.7 | 23.5 | 21.7 | 18.3 | 9.1 |
| Race H | 1.5 | 38.7 | 23.7 | 17.2 | 12.3 | 6.6 |
| Race W | 0.8 | 16.2 | 20.2 | 20.7 | 19.7 | 22.3 |
| Race O | 1.2 | 21.5 | 11.8 | 17.5 | 25.8 | 22.3 |
| Edu <=6 | 1.5 | 36.8 | 26.2 | 20.4 | 10.9 | 4.3 |
| Edu<=12 | 0.5 | 11.7 | 22.6 | 25.8 | 22.4 | 17.0 |
| Edu<=16 | 0.2 | 2.7 | 11.3 | 15.8 | 28.8 | 41.2 |
| 16<Edu | 1.1 | 0.1 | 2.2 | 7.5 | 23.0 | 66.2 |
| Age <25 | 1.8 | 41.5 | 31.7 | 15.5 | 7.3 | 2.3 |
| Age <35 | 0.8 | 16.3 | 20.5 | 26.4 | 21.8 | 14.2 |
| Age <45 | 0.9 | 12.7 | 15.1 | 21.0 | 24.3 | 26.0 |
| Age <55 | 0.5 | 10.8 | 14.1 | 21.5 | 21.1 | 32.0 |
| Age <65 | 2.1 | 18.5 | 19.7 | 15.1 | 21.8 | 22.9 |
| Age <75 | 0.7 | 29.4 | 28.4 | 18.3 | 12.0 | 11.2 |
| 75<Age | 0 | 39.1 | 30.2 | 15.0 | 7.8 | 7.9 |

Race: B(Black), H(Hispanic), W(White), O(Other race)
Income 1<=$12000, Income 2<=$23000, Income 3<=$37000, Income 4<=$59000, Income 5>$59000

The age of the head of household is positively related to the level of household income until around age of 55. Those who are over 65 years old tend to be in the low-income group. Especially those who are aged 75 or older had a higher rate of low-income group than all other groups except the group who are under 25 years of age. The 39% of them are in the lowest income quintile, while only 10% of the group under 55 years of age are in the lowest income group. In general,

relative to the young generation, the old generation is concentrated at the lower income group.

Table 2 shows the level of mean income of each income source for each income quintile. We must know that for a negative income group, the direction of presented proportion is opposite direction because the total income is negative. As far as the proportion is concerned, the wage and salary is a major income source for every group. For second, third, fourth, and fifth income quintile, the proportion of wage and salary income is more than 60% of total income.

For first and second income quintile groups, the proportion of income from source 11(social security, other pension, annuities, disability or retirement programs) is relatively high representing at 37% and 27% respectively. This means that the income source 11 is one of the major income component for these groups, and thus excluding these kinds of benefit in measuring economic status of household is likely to underestimate the economic status for the low-income group. For the lowest income group, ADC, AFDC, food stamps are also one of the major income sources which represents 15% of total income, and this group tends to receive lower benefit from source 8(unemployment and worker's compensation) than the other groups do.

For the high-income groups, the proportions of income from source 2(professional practice, business, or farm) and source 7 (net rent, trusts, or royalties from any other investment or business) were relatively high compared with the low-income groups. Thus, excluding these income sources is likely to underestimate the economic status of the high-income groups.

## Table 2. Weighted mean and proportion of income components by income level

(Unit: $)

| Group Source. | Total group (%) | Negative-Income (%) | Income1 | Income2 | Income3 | Income4 | Income5 |
|---|---|---|---|---|---|---|---|
| Source 1 | 33,028 | 3,682 | 2930 | 11243 | 24713 | 39901 | 89,719 |
|  | (70.40) | (-155.16) | (38.52) | (61.28) | (76.43) | (81.75) | (67.83) |
| Source 2 | 4,123 | -6,243 | 191 | 548 | 1,157 | 2,322 | 17,140 |
|  | (8.79) | (263.08) | (2.51) | (2.99) | (3.58) | (4.76) | (12.96) |
| Source 3 | 669 | 188 | 20 | 16 | 56 | 153 | 3,165 |
|  | (1.43) | (-7.92) | (0.26) | (0.09) | (0.17) | (0.31) | (2.39) |
| Source 4 | 868 | 249 | 112 | 398 | 425 | 562 | 2,913 |
|  | (1.85) | (-10.49) | (1.47) | (2.17) | (1.31) | (1.15) | (2.20) |
| Source5 | 916 | 74 | 142 | 142 | 372 | 295 | 3,712 |
|  | (1.95) | (-3.12) | (1.87) | (0.77) | (1.15) | (0.60) | (2.81) |
| Source6 | 1,240 | 1,299 | 28 | 149 | 205 | 568 | 5,332 |
|  | (2.64) | (-54.74) | (0.37) | (0.81) | (0.63) | (1.16) | (4.03) |
| Source 7 | 1,258 | -2,041 | 99 | 112 | 290 | 560 | 5,466 |
|  | (2.68) | (86.01) | (1.30) | (0.61) | (0.90) | (1.15) | (4.13) |
| Source 8 | 169 | 0 | 49 | 201 | 308 | 216 | 79 |
|  | (0.36) | (0.00) | (0.64) | (1.10) | (0.95) | (0.44) | (0.06) |
| Source 9 | 205 | 0 | 86 | 218 | 266 | 286 | 179 |
|  | (0.44) | (0.00) | (1.13) | (1.19) | (0.82) | (0.59) | (0.14) |
| Source 10 | 351 | 0 | 1171 | 440 | 131 | 7 | 0 |
|  | (0.75) | (0.00) | (15.39) | (2.40) | (0.41) | (0.01) | (0.00) |
| Source 11 | 4,086 | 419 | 2,779 | 4,881 | 4,412 | 3,937 | 4,558 |
|  | (8.71) | (-17.66) | (36.53) | (26.60) | (13.64) | (8.07) | (3.45) |
| Total | 46,913 | -2,373 | 7,607 | 18,348 | 32,335 | 48,807 | 132,263 |
| (Mean) | (100) | (100) | (100) | (100) | (100) | (100) | (100) |
| % of income |  |  | 3.18 | 7.69 | 13.51 | 20.39 | 55.26 |

Source1: wages and salaries, Source 2: professional practice, business, or farm, Source 3: non-taxable investment such as municipal bonds, Source 4: interest, Source 5: dividends, Source 6: net gains or losses from the sale of stocks, bonds, or real estate, Source 7: net rent, trusts, or royalties from any other investment or business, Source 8: unemployment and worker's compensation, Source 9: child support or alimony, Source 10: income from ADC, AFDC, food stamps, or other welfare, Source 11: Social Security or other pension, annuities, or other disability or retirement programs.
Income 1<=$12000, Income 2<=$23000, Income 3<=$37000, Income 4<=$59000, Income 5>$59000

In addition, the negative income group receives higher income from the wage and salary than the lowest income quintile does. Other major income sources are stocks, bonds, or real estate. At the same time, income from professional practice, business, or farm represents

relatively higher proportion of negative income. This group would be business owners rather than really the poor. According to Rogers and Gray (1994) consumer unit of negative income group may have expenditure levels that are more typical of higher income consumers.

The result shows that the incomes from wage, salary, professional practice, business, or farm are highly unequally distributed. The proportion and amount of income from these sources increase with respect to total income level. On the other hand, with exception for the negative income group, the income from source 11(social security or other pension, annuities, or other disability or retirement programs) is more equally distributed compared to income included in property category such as stock, bonds, and investment. However, compared to the amount of benefit from source 11 for the lowest income group, there is still inequality. More important point is that the income from the social security or pension is $2,779 for the lowest income group at 37% of their total income, while the highest income group receives $4,558 from the same category at 3.5% of their total income. Based on mean income, 55%of all income[3] is made by the highest income group, while only 11% by the lowest and second income quintiles representing high level of inequality in income distribution.

Table 3 shows the mean and proportion of income source by age group of the head of the household. Wage and salary increase as the age increases until the households are 55 years old. After that age, the income from wage and salary sharply decreases, while the income from source 11 (social security, other pension, annuities, other disability or retirement programs) increases rapidly. The proportion of

1) This income excluded the income of negative income group.

income from the source 11 is 33% for the group aged between 65 and 75 and 48.6% for the group aged 75 or older. In addition, incomes from interest, dividends, stock or bonds also increase as age increases

### Table 3. Weighted mean and proportion of income component by age (Unit: $)

| Group Source. | Age<25 | Age<35 | Age<45 | Age<55 | Age<65 | Age<75 | 75<=Age |
|---|---|---|---|---|---|---|---|
| Source 1 | 15,574 | 33,983 | 42,952 | 53,503 | 36,000 | 12,495 | 1,379 |
| | (89.23) | (93.95) | (83.95) | (76.01) | (63.86) | (31.01) | (5.63) |
| Source 2 | 391 | 669 | 3,980 | 9,020 | 5,392 | 4,246 | 2,588 |
| | (2.24) | (1.85) | (7.78) | (12.81) | (9.56) | (10.54) | (9.44) |
| Source 3 | 0 | 38 | 238 | 415 | 2,168 | 918 | 1,539 |
| | (0.00) | (0.11) | (0.47) | (0.59) | (3.85) | (2.28) | (5.61) |
| Source 4 | 27 | 83 | 392 | 963 | 1,393 | 1,719 | 2,111 |
| | (0.15) | (0.23) | (0.77) | (1.37) | (2.47) | (4.27) | (7.70) |
| Source5 | 12 | 58 | 306 | 577 | 1,120 | 2,923 | 2,428 |
| | (0.07) | (0.16) | (0.60) | (0.82) | (1.99) | (7.25) | (8.86) |
| Source6 | 145 | 198 | 693 | 1,333 | 2,509 | 2,516 | 1,832 |
| | (0.83) | (0.55) | (1.35) | (1.89) | (4.45) | (6.24) | (6.68) |
| Source 7 | 76 | 166 | 1,018 | 2,048 | 1,654 | 1,728 | 2,111 |
| | (0.44) | (0.46) | (1.99) | (2.91) | (2.93) | (4.29) | (7.70) |
| Source 8 | 103 | 173 | 276 | 267 | 117 | 24 | 18 |
| | (0.59) | (0.48) | (0.54) | (0.38) | (0.21) | (0.06) | (0.06) |
| Source 9 | 81 | 189 | 412 | 296 | 104 | 21 | 3 |
| | (0.46) | (0.52) | (0.81) | (0.42) | (0.18) | (0.05) | (0.00) |
| Source 10 | 854 | 441 | 376 | 298 | 292 | 304 | 72 |
| | (4.89) | (1.22) | (0.73) | (0.42) | (0.52) | (0.75) | (0.26) |
| Source 11 | 190 | 174 | 518 | 1,668 | 5,624 | 13,404 | 13,315 |
| | (1.09) | (0.48) | (1.01) | (2.37) | (9.98) | (33.26) | (48.60) |
| Total | 17,453 | 36,172 | 51,161 | 70,390 | 56,373 | 40,298 | 27,396 |
| | (100) | (100) | (100) | (100) | (100) | (100) | (100) |
| % of income | 5.83 | 12.09 | 17.10 | 23.52 | 18.84 | 13.47 | 9.16 |

Source1: wages and salaries, Source 2: professional practice, business, or farm, Source 3: non-taxable investment such as municipal bonds, Source 4: interest, Source 5: dividends, Source 6: net gains or losses from the sale of stocks, bonds, or real estate, Source 7: net rent, trusts, or royalties from any other investment or business, Source 8: unemployment and worker's compensation, Source 9: child support or alimony, Source 10: income from ADC, AFDC, food stamps, or other welfare, Source 11: Social Security or other pension, annuities, or other disability or retirement programs.

and they tend to have more wealth than the young do. Based on the proportion of the each income source, the incomes from social

security or pension category and property income category are more important for the old-old aged than for the young aged, and income from wage and salary is less important for the aged compared to the young.

Considering this result, the retirement plan is very important for the household. Even though these data represent total income of a particular point in time for different cohorts of households and are not a true measure of the effect of aging for a single cohort, this result is consistent with the human capital theory[4].

Table 4 presents the mean and proportion of income components by education level of the head of household. As education increases, the incomes from source 1 (wage and salary) and source 2 (professional practice, business, farm) increase. For the person with less than 6 years of education, income from source 11(social security, other pension, annuities, other disability or retirement programs) has relatively higher proportion compared to the other groups have even though the amount of benefit is the lowest. For the income from source 6 (stocks, bonds or real estate and dividends), the person who has less than 12 years of education has relatively lower proportion compared to the other groups. This group has the highest proportion of wage and salary income.

In general, according to education level, the income from all kinds of income source varies. However, among them the income from source 11 (social security, other pension, annuities, other disability or retirement programs) has more similar amount to each

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2) According to the human capital theory, as work experience increases the wage increases but after a period that the marginal productivity is decreased sharply and work skill is decreased, the wage is likely to decrease. The wage change with age as work skill or experience change with age.

group. For the income from source 7 (net rent, trusts, or royalties from any other investment or business), the group that has the highest level of education is likely to have the highest proportion of these income source compared to the other groups.

Table 4. Weighted mean and proportion of income component by education                                    (Unit:$)

| Group \ Source. | Edu <=6 | Edu<=12 | Edu<=16 | 16<Edu |
|---|---|---|---|---|
| Source 1 | 15,666(63.91) | 31,082(73.29) | 57,784(72.86) | 80,074(68.83) |
| Source 2 | 1,797(7.33) | 2,765(6.52) | 8,199(10.34) | 13,134(11.29) |
| Source 3 | 242(0.99) | 1,056(2.49) | 873(1.10) | 1,237(1.06) |
| Source 4 | 490(2.00) | 638(1.50) | 1,522(1.92) | 2,425(2.08) |
| Source5 | 487(1.99) | 359(0.85) | 2,020(2.55) | 2,670(2.30) |
| Source6 | 747(3.05) | 380(0.90) | 2,414(3.04) | 4,965(4.27) |
| Source 7 | 703(2.87) | 619(1.46) | 1,843(2.32) | 7,039(6.05) |
| Source 8 | 108(0.44) | 209(0.49) | 247(0.31) | 115(0.10) |
| Source 9 | 325(1.33) | 96(0.23) | 126(0.16) | 137(0.12) |
| Source 10 | 514(2.10) | 326(0.77) | 36(0.05) | 6(0.01) |
| Source 11 | 3433(14.01) | 4879(11.50) | 4243(5.35) | 4534(3.90) |
| Total | 24,512(100) | 42,409(100) | 79,307(100) | 116,336(100) |
| % of income | 9.34 | 16.15 | 30.20 | 44.31 |

Income sources: (i) wages and salaries, (ii) professional practice, business, or farm, (iii) non-taxable investment such as municipal bonds, (iv interest, (v) dividends, (vi) net gains or losses from the sale of stocks, bonds, or real estate, (vii) net rent, trusts, or royalties from any other investment or business, (viii) unemployment and worker's compensation, (ix) child support or alimony, (x) income from ADC, AFDC, food stamps, or other welfare, (xi) Social Security or other pension, annuities, or other disability or retirement programs.

Table 5 presents the mean and proportion of income components by race and ethnicity of the head of household. Previous research showed that race is an important determinant of income inequality (Aigner & Heins, 1967) For race and ethnicity there are wage and salary gaps. Hispanic's mean total income is lower than that of the

other groups. One of the main reasons is the low wage and salary income that represents the highest proportion of total income for every race and ethnicity. Even though Hispanics receive the lowest salary and wage income, the proportion of this income is the highest among sub groups. On the other hand, for White, the amount of salary and wage income is relatively high compared with Black and Hispanic, while the proportion is the lowest. The mean household income for White is almost twice of that of Hispanic. For the source 11, source 9,

Table 5. Weighted mean and proportion of income component by race and ethnicity                                    (Unit:$)

| Group<br>Source. | White | Black | Hispanic | Other |
|---|---|---|---|---|
| Source 1 | 35,360(68.41) | 26,992(79.70) | 19,543(83.03) | 39,552(81.89) |
| Source 2 | 5,019(9.71) | 1,207(3.56) | 341(1.45) | 2,924(6.05) |
| Source 3 | 844(1.63) | 10(0.03) | 5(0.02) | 324(0.67) |
| Source 4 | 1,073(2.08) | 36(0.11) | 51(0.22) | 684(1.42) |
| Source5 | 1,153(2.23) | 1,348(3.98) | 17(0.07) | 456(0.94) |
| Source6 | 1,585(3.07) | 7(0.02) | 62(0.26) | 30(0.06) |
| Source 7 | 1,485(2.87) | 468(1.38) | 118(0.50) | 1,637(3.39) |
| Source 8 | 152(0.29) | 500(1.48) | 122(0.52) | 198(0.41) |
| Source 9 | 217(0.42) | 140(0.41) | 163(0.69) | 180(0.37) |
| Source 10 | 240(0.46) | 863(2.55) | 807(3.43) | 326(0.67) |
| Source 11 | 4,564(8.83) | 2,294(6.77) | 2,309(9.81) | 1,989(4.12) |
| Total | 51,692(100) | 33,865(100) | 23,538(100) | 48,300(100) |

Income sources: (i) wages and salaries, (ii) professional practice, business, or farm, (iii) non-taxable investment such as municipal bonds, (iv interest, (v) dividends, (vi) net gains or losses from the sale of stocks, bonds, or real estate, (vii) net rent, trusts, or royalties from any other investment or business, (viii) unemployment and worker's compensation, (ix) child support or alimony, (x) income from ADC, AFDC, food stamps, or other welfare, (xi) Social Security or other pension, annuities, or other disability or retirement programs.

and source6, the incomes from these sources are the highest for White. Except for White, the income from source 11 is equally distributed

over race and ethnic. For the unemployment and worker's compensation, the amount of this income is the highest for Black.

For the other races, they have a little higher wage and salary income than White. But they still have lower mean total income compared to White. The gap between White and the other race categories is due to property income. They have a very different amount of financial asset at the beginning. Thus the gap in property income is created even though there is no big difference in wage and salary income.

Even though the gap in race and ethnicity depends on the financial assets, the most powerful sources in explaining racial and ethnic total income are still wage and salary income since the proportion of this income is the highest for every race and ethnic group. Especially for the Hispanic, the income from wage and salary is an important reason for racial and ethnic gap in total income.

*Regression Analysis*

This section presents the result of multi-regression analysis across income quintile. Table 6 shows the significance of each income component's contribution to total income measured in dollars. The dependent variable is total income and the independent variables are every income component included in the total household income. In total group, every income component was very significant except the income from source 8 (unemployment and worker's compensation), source 9 (child support or alimony), and source 10 (ADC, AFDC, food stamps, or other welfare).

Table 6. Weighted Multi-regression for total income by income
level

| Independent variables | Coefficient and sub-groups | | | | | | |
|---|---|---|---|---|---|---|---|
| | Total Group | Negative Income | Income 1 | Income 2 | Income 3 | Income 4 | Income 5 |
| Source 1 | .952*** | .828 | .287*** | .154*** | .189*** | .150*** | .916*** |
| Source 2 | .310*** | .671* | .062** | .119*** | .069** | .010 | .304*** |
| Source 3 | 1.163*** | -.432 | -.953 | .727 | .243 | .124 | 1.161*** |
| Source 4 | -.484*** | -5.330 | .466 | .175** | .132 | .135 | -.462*** |
| Source5 | .387*** | 11.267 | .338** | -.027 | .055 | -.003 | -.414*** |
| Source6 | .310*** | .497** | -.984*** | .050 | -.004 | .204*** | .297*** |
| Source 7 | .335*** | .509 | -.077 | .038 | .065 | .109 | .326*** |
| Source 8 | .389 | 0 | .671 | -.063 | .103 | .069 | -.498*** |
| Source 9 | .937 | 0 | .321 | .155 | .260 | .175 | .482 |
| Source 10 | .344 | 0 | .339*** | .080 | .261 | 1.961 | 0 |
| Source 11 | 1.119*** | -4.749 | .376*** | .141*** | .181*** | .139*** | 10.136*** |

Income sources: (i) wages and salaries, (ii) professional practice, business, or farm, (iii) non-taxable investment such as municipal bonds, (iv) interest, (v) dividends, (vi) net gains or losses from the sale of stocks, bonds, or real estate, (vii) net rent, trusts, or royalties from any other investment or business, (viii) unemployment and worker's compensation, (ix) child support or alimony, (x) income from ADC, AFDC, food stamps, or other welfare, (xi) Social Security or other pension, annuities, or other disability or retirement programs.
*P<. 01
**P<. 005
***P<. 0001

The degree and significance of the contribution of each income component are different according to income quintile. Especially income form source 1 (wage and salary) and 2 (professional practice, business, or farm) are significant income sources for all income groups except for negative income group and fourth income quintile respectively. For the negative income group, the incomes from source 2 (professional practice, business, or farm) and source 6 (sale of stocks, bonds, or real estate) are only significant.

For the highest income quintile, the incomes from source 4 (interest), source 5 (dividends), and source 8 (unemployment and

worker's compensation) are negatively associated with total income, while the incomes form source 6 (sales of stocks bonds, or real estate), 7 (net rent, trusts, or royalties from any other investment or business), and 11 (social security, other pension, annuities, or other disability or retirement programs) are positively related with total income.

On the other hand, for the lowest income quintile, the income from source 5 (dividends) is positively related with total income. The income from source 10 (ADC, AFDC, food stamps, or other welfare programs) is significant only for the lowest income quintile while the income from source 11 (social security, other pension, annuities, or other disability or retirement programs) is significant for every income quintile except for the negative income group.

# IV.   CONCLUSION

This study shows that income structure and composition are different by income quintile. Thus, measuring total income is clearly affected by what kinds of income sources are included. The distributions of income from source 1 (wage and salary), 2 (professional practice, business, or farm), 4 (interest), 6 (net gains or losses from the sale of stocks, bonds, or real estate), and 7 (net rent, trusts, or royalties from any other investment or business) are found to be quite positively associated with overall income ranking while, public assistance income (source 10: ADC, AFDC, food stamps, or other welfare programs) is found to be negatively associated with overall income positions.

Even though property income was found to be relatively important at the higher income levels compared with the other income groups, income from wage and salary represents the highest proportion of total income. It implies that wage or salary income could be more serious cause for income inequality than property income.

Considering the wage and salary gap, the labor force participation, occupational structure, and educational structure would be factors affecting the gap in mean income of subgroups. Therefore, the policy to reduce inequality should focus on the education and employment policy as well as cash or in-kind transfer for the low-income group. As this study shows, education level is related to income distribution, thus government can make a new policy that provides economic opportunity through programs like education and job training.

Considering the important share of public transfers in the composition of total household income, the benefit from government transfer should be included in measuring income to obtain an accurate understanding of the economic status of the low-income groups. The results support other research and findings on the importance of social welfare benefit in obtaining income among household with low-income. In addition, redistribution through taxation that funds benefits for the low-income group might improve income inequality. However, redistribution program is relatively small part of government welfare policy in the United States (Huber, Ragan, & Stephens, 1993).

Income from source 11 (social security, other pension, annuities, or other disability or retirement programs) is found to have very little relationship with overall rank and it is the most equally distributed. Incomes from these sources tend to be distributed based on need instead of individual's financial ability. Thus, this income is more

likely to be distributed equally. However, previous studies have shown that pensions increase inequality, at least in the lower part of the distribution: those households with low non-pension wealth do not have pensions either (Reimers's comment, Mcdermed, Clark, & Allen, 1989). In addition, 1997 amendments to the Social Security Act brought on a substantial reduction in social security benefit for individuals born after 1916. They received lower social security benefits than earlier cohorts in general. This differential in benefits may affect the distribution of total income. Even though SCF data include both social security and employer pension in measuring household income, it does not provide detailed information about social security and pension separately. If social security and pension were examined separately, it will help determine how large pension wealth is relative to other components of wealth and how social security wealth affects income distribution and equality.

From a policy perspective it becomes important to estimate the economic status of individuals rather than a family. The economic status of each family member will be affected not only by total household income but also by size and composition of the family. For the future study, measuring economic status of individuals based on relative size and composition of the family is important to describe how each member is well off. Thus, advancement in the income scale is very important to the measuring of economic well being of family or individual.

In addition, differences from group to group, in the relative importance of such sources of income will obviously present the limitation of comparisons of relative economic well being based upon money income alone. Furthermore, even though non-money income is

included in measuring economic status, the future concern would be how to measure non-money income. Sometimes researchers measure the value of non-cash transfer such as food, housing or medical care transfer based on the cost of providing that benefit to the recipient. However, often the value of the non-cash transfers is less than the cost. To treat non-cash transfers as sources of additional economic welfare for low-income households, it is important to estimate correctly the value of the benefits added by these transfers.

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*Summary*

# 계층별 가계소득의 구성과 분포의 비교

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본 연구는 1995 Survey of Consumer Finances (SCF) 데이터를 이용하여 미국의 계층별 가계소득의 구성과 분포를 비교하였다. 소득수준, 교육수준, 연령, 인종에 따른 하위 집단별로 평균 가계소득과 이를 구성하는 요소와 각 요소가 총 가계소득에서 차지하는 비중을 비교분석 함으로서 계층별 소득격차에 기여하고 있는 소득의 주된 구성요소를 파악하는 것을 연구의 목적으로 하고 있으며 더 나아가 소득의 측정방법에 따라 계층별 소득불균형의 정도가 달라 질 수 있음을 시사하고 있다.

일반적으로 가계소득을 경제적 지위의 척도로 삼을 경우 모든 측정 가능한 소득이 가계소득에 포함되지만 현실적으로 조사되는 소득은 실질적인 총소득보다는 작게 측정이 될 것이다. 또한 계층별로 주요 소득원과 분포가 다를 것이며 어떠한 소득이 포함되느냐에 따라서 조사되는 총소득은 달라질 수 있으며 경제적 지위 또한 다르게 측정될 것이다.

본 연구에서는 SCF 의 세부적인 소득 데이터를 가지고 money income 뿐만 아니라 정부 복지 정책을 통해서 지원되는 식료품 보조 쿠폰(food stamps) 등과 같은 non-money income 도 총소득에 포함시켜 한층 폭 넓은 개념으로 총소득을 측정하였다. 소득구성요소에 대하여 weighted multi-regression 을 이용하여 계층별로 소득구성요소의 상대적 중요성을 비교하였다.

연구의 결과를 살펴보면 임금, 자영업에 의한 소득, 자본소득이 상대적으로 계층 간에 불균등하게 분포되어 있었으며 이와 같은 소득은 고소득층에 집중적으로 편중되어 계층 간 소득불균형을 심화 시키고 있는 것으로 조사되었다.  반면에 사회보장이나 퇴직연금 소득은 상대적으로 계층 간에 균등하게 분포되어 있었으며 이러한 소득과 정부복지정책 프로그램을 통한 소득은 저소득층의 경우에 주요 소득원으로 나타났으며 이러한 소득을 제외하여 총소득을 측정하는 경우 저소득층의 경제적 지위가 실제보다 낮게 측정될 우려가 있음을 보여 주었다.