ECONOMICS AND AGING: RETIREMENT INCOME

OF WOMEN SIXTY-FIVE AND OLDER

By

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PREFACE

This study is undertaken to investigate the effects of work history patterns, human capital factors and sociodemographic characteristics on income and assets of women 65 years of age and over. A nationally representative sample is used in the study. The research tests race, marital status and age for interaction with independent variables. The results of the study are discussed in terms of the income sources and types of assets which women 65 years of age and over possess.

The format of this master's thesis deviates from the standard thesis style used at Oklahoma State University. The purpose of this deviation in style is to provide a manuscript suitable for publication, as well as fulfilling the necessary thesis requirements. The manuscript follows guidelines in the publication manual of the American Psychological Association, with some minor alterations for presentation in the thesis. Cooperation of the Graduate College and Dean Norman Durham in allowing format deviations is greatly appreciated.

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Alternative model specifications are tested. Chow Test results indicate that marital status has statistically significant interaction with economic indicators for both income and asset amounts for older women, while age interacts with economic indicators for assets only.

The resulting disaggregated models specify work history patterns and educational levels as economic indicators of income and asset amounts. Least square regression results indicate that, in general, unmarried women's economic characteristics have a negative effect on asset amounts, while married women's economic characteristics have a statistically significant positive effect on asset amounts.

Introduction

National attention is currently focused on the economic profile of older women. Despite increased private pension and social security benefit payments, poverty continues to

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affect many of the elderly--especially women. According to Estes, Gerard, and Clarke (1984) 72% of the elderly poor are women who are currently unmarried. Holden, Burkhauser and Myers (1986) report that findings from the 1983 Current Population Survey (CPS) show that widows account for 48% of the elderly poor. "An examination of the economic status of older women indicates that the golden retirement years are more myth than reality" (Nickols & Wanzer, 1983, p. 22).

Social and economic inequities during retirement years are an extension of an individual's earlier position in the labor force (Estes et al., 1984). Social Security and other pension benefits reflect already existing inequities in the labor market, such as wage differentials, low wage occupations, and interrupted labor force participation. In 1980 retired female earners received Social Security pensions valued at less than two-thirds of the benefit level of men (Tracy & Ward, 1986). Low benefit levels can be attributed to economic characteristics of women. Women who divorce before 10 years of marriage do not receive Social Security benefits from their former spouses' employment during marriage. Women also receive reduced Social Security protection if their spouses die before retirement age (Estes et al., 1984). In addition to the lack of Social Security coverage, women frequently do not have private pension coverage. Pension plans reward uninterrupted work with one employer, which is generally not a characteristic of women's employment (Peck & Webster, 1985). The lack of sufficient

Social Security and pension benefits forces many older women into poverty.

By the year 2010 it is estimated that one out of seven Americans will be 65 years old or older (U.S. Bureau of the Census, 1983). Two-thirds of the elderly will be women (Estes et al., 1984). The estimated increase in the population of elderly women requires that more research be conducted regarding retirement issues. According to Nickols and Wanzer (1983) "Information is needed, in particular, about women's employment decisions ... and the associated consequences for retirement income" (pp. 22-23).

The purpose of this study is to investigate the effects of economic factors on the dollar value of income and assets of older women--65 years of age and older--while controlling for sociodemographic characteristics. It is hypothesized that full-time continuous employment has a positive effect on both income and asset amounts; while, interrupted work history patterns have a negative effect on income and asset amounts. Additionally, it is hypothesized that low educational levels have a negative effect on income and asset amounts. Age and marital status are expected to differentially influence the direction and intensity of the effect of work history patterns and educational levels on income and asset amounts.

Review of Related Literature

Several studies have examined income and assets of the elderly. Currently, the elderly population is viewed as

having improved financially, relative to the non-elderly population (Radner, 1987; Quinn, 1983). A majority of studies which show financial improvement for the elderly have focused on the total elderly population. Findings from studies which focus on the elderly as a group may be misleading. Persons 65 and over are not a homogenous group; therefore, when reported as a group, individual differences regarding age and gender are biased.

For older women, retirement involves a change in economic status from that of the working years. Uhlenberg and Salmon (1986) noted that aging for many women involves two important sources of income decline--retirement and widowhood. After retirement or widowhood, the income and asset levels of most older women are substantially reduced (Bloom, 1972).

Income and Assets

Six major sources of income identified for the elderly include 1) interest or dividends, 2) pensions or annuities, 3) employment, 4) liquidated assets, 5) social security, and 6) public assistance (Bloom, 1972; Gobeil, 1987). According to Hurd and Shoven (1982), Social Security and private pensions are the primary sources of retirement income for the elderly. Many women are not eligible for Social Security or private pensions due to occupational choices, low wages, or interrupted work patterns. A majority of women work in clerical, sales, and service jobs which are not covered by pension plans (Heidbreder, 1972; Szinovacy,

1982; Kahne, 1985; Peck & Couchman, 1987). Fifty-five percent of all women workers are employed in trade and service occupations which have a 30% pension coverage rate (Snyder, 1986). When women are covered by private pensions greater discontinuities in employment, lower tenure on the job, early termination from jobs, and limited mobility due to occupational segregation adversely affect their vesting rights, service credits and benefit levels (Kahne, 1985; Szinovacy, 1982).

Assets held by the elderly can be divided into three groups, 1) home equity, 2) liquid assets, and 3) less liquid assets (Friedman & Sojogren, 1981). Research studies have found that home equity comprises most of the asset value of the elderly (Friedman et al., 1981; Hurd et al., 1982). Almost 66% of female householders 65 years of of age or older hold assets in the form of home equity (U.S. Bureau of the Census, 1986). A smaller percentage of elderly female householders have stocks, mutual funds, savings bonds, Individual Retirement Accounts (IRA) and KEOGH accounts than the overall elderly population (U.S. Bureau of the Census, 1986).

Economic Factors

Women's work history patterns influence income and asset amounts of older women. Adequate income during retirement is linked to characteristics of previous work. Individuals who receive high retirement incomes tend to have worked steadily over many years in occupations characterized

by high wages and receipt of fringe benefits in industries offering pension coverage (Szinovacy, 1982). These industries include government and public administration, finance, insurance, manufacturing, wholesale trade, transportation, communication, utilities, and professional services. Women workers are under represented in these industries (Szinovacy, 1982).

Education is associated with income and asset amounts of women. High educational levels increase the likelihood of being employed (Peck & Couchman, 1987), working more after leaving school and receiving higher earnings (Lopata & Norr, 1980). The monthly mean pension income of persons with a college degree is $950. A person with four years of high school receives a monthly mean pension income of $550 (U.S. Bureau of the Census, 1987). Additionally, Szinovacy (1982) reports that women with a college education spend 41% of their working life in the labor force, while women with high school educations spend 37% of their working life in the labor force. Education is also linked to receipt of interest and dividend income. Findings from a study conducted by Maxwell (1986) indicate that individuals with higher educational levels are more likely to save for retirement; therefore, the higher their asset income during retirement.

Methodology

The sample for this analysis is from the 1983 Survey of Consumer Finances. The Survey is jointly sponsored by a

consortium of federal agencies including the Federal Reserve Board, the Department of Health and Human Services, and the Treasury Department. The data set contains extensive work history, pension coverage, and asset accumulation data of 3,824 cases. The Survey has been designed and conducted by the Survey Research Center of the University of Michigan. Survey data collection occurred February through July 1983 (Avery, Elliehausen, Canner & Gustafson, 1984). Personal interviews have been conducted with the head of the household or, in the case of a married couple, the person most knowledgeable about the family's finances (Avery et al., 1984). The person interviewed has been encouraged to consult financial records and other family members in order to give complete and accurate information.

A multi-stage probability sampling design has been used to select a sample representative of all families in the continental United States, excluding those on military bases. Families have been selected from 74 sample points in 37 states and the District of Columbia. The northeast, north central, south, and western regions have been represented in the sample in proportion to their populations (Avery et al., 1984). A response rate of 71% has been reported for the 1983 Survey of Consumer Finances.

The Survey sample included 3,824 respondents. To create the sample used in the analysis, the original data set has been separated by gender and age to allow only females 65 years of age and over to remain in the sample.

This results in an unweighted sample size of 281 older women. Fourteen respondents have been dropped due to missing values for work history or education variables. Therefore, the weighted sample used in the analysis contains 375 females 65 years of age or older.

Measurement of Variables

Creation of Variables

Variables used in the analysis are identified and defined in Table 1. The table includes economic factors, sociodemographic characteristics, income sources and amounts, and asset amounts and types.

Insert Table 1 about here

Household income is created by summing the dollar amounts of wages, farm income, income from investments or dividends, income from rental property, income from unemployment insurance, gifts of money, payments from Supplemental Security Income (SSI), Individual Retirement Accounts (IRA), KEOGH Accounts, saving accounts, and income from other sources not previously mentioned for each household. Information regarding the value of in-kind benefits is not included in the data set; therefore, in-kind benefit value is not included in the calculation of income.

Net value of household assets is created by summing the dollar value which is reported by the household for

certificates of deposit and savings certificates, money market funds, foreign and municipal bonds, mutual funds, stocks, trust funds, business investments, and other assets not previously mentioned, such as a house, jewelry, and artwork. Any loan on an asset is subtracted from the value of the asset.

Work history patterns, established by Couchman and Peck (1987), describe past labor force behavior of the three cohorts of older women. Six work history patterns are identified: never employed--no work history, part-time-- only part-time work is reported, continuous full-time--only full time work, interrupted full-time--full-time worker with a work interruption(s) lasting one year or more, dual-interrupted-- both part-time and full-time work is reported with at least one interruption lasting on year or more, and dual-continuous--both part-time and full-time work is reported with no interruptions lasting one year or more. Due to the small number of older women reporting dual-interrupted and dual-continuous work histories these work history patterns are combined into dual.

Education is measured as the highest grade completed and then divided into five levels. The first level includes individuals with an eighth grade education or less. The second level is comprised of women with some high school education, but no high school diploma. Women who have completed high school or have received a General Education Diploma (GED) are included in the third level. The fourth

level includes individuals who have attended vocational training or have attended college but have not graduated. The fifth level is comprised of individuals who have completed at least a bachelor's degree.

Modeling and Interaction

It is necessary to determine if statistically significant interaction is present between marital status, age or race and the independent variables of the model. If, for example, race interacts with education to influence income differently by race, then the effect of education on income is represented by the intercept--omitted category--and coefficient for the race variable only. This does not allow for differential slope effects of the independent variables for each race.

The Chow test is used to determine if there is a statistically significant difference in explained variation between two alternative models--a restricted model with interaction (R) and an unrestricted model (UR) without interaction[1].

Alternative models have been tested. The first model tests interaction with race. Previous research conducted by Jones and Peck (1988) indicates that race and age have statistically significant interaction with independent variables for women aged 35 to 64. However, for women 65 and over no statistically significant difference has been found (see Table 10). Therefore, the model has not been disaggregated by race.

The second model tested whether interaction effects exist for marital status. The statistically significant F value indicates that older women are not a homogenous group regarding effects of marital status on income and asset amounts. Therefore, both income and asset models have been disaggregated by marital status.

The third model has been tested for interaction effects for each cohort. The Early-late cohort has statistically significant interaction with independent variables in the regression for assets only. Indicating that older women are not a homogenous group regarding age effects on asset amounts. The model is, therefore, disaggregated by cohort for asset amounts.

As a result, the final model used in the analysis is disaggregated by marital status--separate models have been estimated for each of the two marital status categories, i.e., married or unmarried--for both income and assets. Assets are further disaggregated by cohort--separate models have been estimated for each of the three cohorts, i.e., Early-late, Middle-late or Late-late. Race is included in the model as a dummy variable.

Characteristics of the Sample

The sample is divided into three cohorts. The Early-late cohort--women aged 65 through 69--has 126 respondents. The Middle-late cohort contains 128 women aged 70 through 74. The Late-late cohort includes 121 women 75 years of age and over. The data are top coded; therefore,

anyone over 90 years of age is recorded as 90. Table 2 provides descriptive statistics for the sample.

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Insert Table 2 about here

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Unmarried women comprise slightly more than half of the sample (50.7%). The Early-late age cohort has a larger percentage of married women that the Middle-late and Late-late cohorts--65%, 55%, and 27% respectively. Widows account for a larger share of Late-late cohort (57%) than the Early-late cohort (34.9%) and the Middle-late cohort (37.5%). The decrease in married women and increase in widows from Early-late cohort to Late-late cohort is expected because women have a longer life expectancy that men and generally do not remarry when widowed at an older age.

For all women 65 and over, 33.8% have completed less than the eighth grade. Nineteen point five percent of all the women in the sample have completed some high school, but did not receive a diploma. High school diplomas have been received by 25.9% of the total sample. Lower percentages of women have received schooling or training above the high school level. Women with vocational training or some college comprise 13.9% of the sample and seven point seven percent of the sample have graduated from college. These same patterns remain when the sample is divided by age

cohort, with the largest proportion of women having completed eighth grade or less (see Table 2).

Work history patterns have been identified for older women. Interrupted full-time work is reported by the largest percentage of older women. Sixty-six percent of the women in the sample report having at least one work interruption lasting a year or more. Continuous full-time employment is reported by 20% of the sample. The total number of years of full-time continuous and interrupted employment range from one year to 55 years, with an average of 20 years in the labor force. The Late-late cohort has the same percentage of respondents reporting continuous full-time work and never having paid employment.

Income of the elderly usually comes from three main sources--private savings, private pensions and government pensions. Table 3 provides an overview of the percent of income received by older women from each source.

Insert Table 3 about here

Income from savings contributes the largest share of income for elderly women. The Early-late cohort relies more on savings as a source of income than the two other age cohorts. The Late-late cohort receives a larger share of income from government pensions than younger age cohorts. This could be due to the drawing down of savings by older

women, leaving them a smaller percentage of savings which increases eligibility for SSI payments.

The Early-late cohort receives a mean income of $13,505 annually. The Middle-late cohort receives a mean annual income of $7,671. The Late-late cohort receives a mean income of $9,310 annually. If liquid assets, such as savings, are not included in the calculation of income, the annual mean income for the Early-late, Middle-late, and Late-late cohorts drops to $11,167, $5,954 and $6,113, respectively. The decline in mean annual income when savings are not included illustrates the importance of savings upon income receipt.

Savings rates generally increase with age until retirement, then they decrease with age (Mirer, 1979). This savings pattern is found to be true for women in this study. The percent of savings accounts owned by women declines over the age cohorts from 56.5% in the Early-late cohort to 47.1% in the Late-late cohort.

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Insert Table 4 about here

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Pensions contribute the largest proportion of income for the Early-late and Middle-late cohort--17.3% and 22.4%, respectively. Savings contributes the largest proportion of income for the Late-late cohort--34.3%. Social Security contributes eight point four percent of the income in the

Early-late cohort, 11.1% for the Middle-late cohort and
13.5% in the Late-late cohort (see Table 4).

Table 5 show the percentage each type of asset
contributes to total value of assets. The Early-late cohort
holds assets with a mean value of $110,143. The Middle-late
cohort has assets worth a mean of $32,293. The Late-late
cohort has a mean asset value of $22,422.

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Insert Table 5 About Here

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Home equity comprises the largest percentage of asset
value for elderly population today (Hurd & Shoven, 1982).
Home equity contributes the largest proportion of total
asset value for both the Middle-late and Late-late cohorts.
Twenty-three percent of total asset value for Early-late
cohorts is provided through home equity. The home equity
value for the Middle-late cohort increases to 44.2%. The
Late-late cohort has 58.3% of all assets in home equity.
This large percent of asset value held in home equity is due
to the rising value of their homes over time, which
increases the proportion of this asset relative to other
assets. Older individuals also have a large proportion of
assets in home equity because they have paid off the
mortgage. For the Early-late cohort stocks provide the
largest share of asset value (32%).

Analytical Procedure

Ordinary least squares (OLS) regression is used to identify the effect of economic factors on income and asset amounts. The model used for income regressions is disaggregated by marital status; therefore, two regressions are estimated for income--one for married women and one for unmarried women. The reference group which is used in both income regressions consists of non-white women in the Middle-late cohort--70 through 74 years of age who have never worked and have a college degree--combination of omitted categories of dummy variables. The model used for asset regressions is disaggregated by marital status and age; therefore, six regressions are estimated for assets. The reference group which is used in the regressions for assets are also non-white and have the same work history pattern, and educational level as the income reference group. The age of each reference group in the asset regressions, however, differed due to separate analysis of each age cohort. The reference group for the Early-late cohort consists of women 70 years of age and over. The Early-late cohort--aged 65 through 69--and Late-late cohort--75 years of age and over--are the reference group for the Middle-late cohort. The Late-late cohort's reference group consists of women 65 through 74 years of age.

Findings and Discussion

Results of the OLS regression analysis are presented in

Table 6. Various factors appear to statistically
significantly effect the income and asset levels for married
and unmarried women. Unmarried women have statistically
significant decreases in income and asset amounts, while
married women have statistically significant increases in
income and asset amounts related to economic factors.

Insert Table 6 About Here

Regression results for married and unmarried women
reveal that education is an important factor in the receipt
of income for unmarried women, but not for married women.
For unmarried women any educational level below a college
degree has a statistically significantly negative effect on
the dollar value of income they receive. The differing
effects of low educational levels on income for married and
unmarried women could be due to the reliance of married
women on their husbands for retirement income. Because
married women can rely on another person for income, who may
have a higher educational level, their own educational level
is not as important as it is for unmarried women.

Wage rates, employment and amount of savings are
affected by educational level. The higher a person's
educational level, the more likely they are to be employed
and receive higher earnings (Lopata et al., 1980).
Employment experience and wage rates are reflected in

pension benefits. The more continuous a person's employment and the higher the wage the more they receive in pension benefits (Szinovacy, 1982). Persons with a higher educational levels are also more likely to save for retirement (Maxwell, 1986). This could explain why lower educational levels, when compared to a college degree, result in a statistically significant decrease in income for unmarried women.

Unmarried women with an eight grade education or less receive approximately $20,682 less in income than the reference group--non-white women who have never worked and have a college degree. Having some high school education, but not a college degree, reduces income by $17,714 when compared to the reference group. Receiving a high school diploma results in a smaller decrease in income than having vocational training or some college for unmarried women. Having a high school diploma reduces income by $14,658, while having vocational training or some college reduces income by $15,332, relative to income which is received by the reference group.

Married women in the Early-late cohort have a statistically significant increase in income relative to the Middle-late cohort. Women in the Early-late cohort receive approximately $5,794 more income that the reference group-- the Middle-late cohort. Many women in the Early-late cohort are still in the labor force; therefore, they have not experienced a decrease in income associated with retirement

as the Middle-late cohort has.

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Insert Table 7 About Here

Education and age also statistically significantly

effect the value of assets that are owned by women in each

age cohort. For married women in the Early-late cohort,

having completed some high school is associated with a

statistically significant decline in the value of assets

relative to women who have completed college. The decline

in the value of assets which married women encounter in

relation to not finishing high school is approximately

$68,323. Vocational education or some college, relative to

completing college, statistically significantly increases

the value of assets that are owned by married women in the

three cohorts. Married women in the Early-late cohort who

have vocational training or some college have an increase of

approximately $181,515, the Middle-late cohort has an

increase in asset value of $178,951 and the Late-late cohort

experiences an increase of approximately $217,796 in total

asset value, relative to the value of assets which are owned

by their reference group. For unmarried women receiving

less than a high school diploma is related to a

statistically significant decrease in the dollar value of

assets. This decrease effects unmarried women in all three

age cohorts. Unmarried women with an eighth grade education

or less experience the greatest decrease in the value of assets. Having an eighth grade education or less results in a decline in the value assets of $47,832 in the Early-late cohort, a $76,485 in the Middle-late cohort, and a decline of $47,093 in the Late-late cohort.

For unmarried women, being in the Early-late cohort and being white are positively related to their asset amounts. The Early-late cohort of unmarried women, when compared to the reference group--women 70 years of age or older--have a statistically significant increase of $18,248 in the value of assets. Being white in the Early-late cohort increases the dollar value of assets by approximately $15,627 relative to the reference group of non-white Middle-late women.

Work history patterns are found to have a statistically significant effect on the dollar value of assets owned by unmarried women in the Early-late and Middle-late cohorts. Full-time continuous employment, full-time interrupted employment and a dual work history, in relation to never working, are negatively related to the dollar value of assets. Women who have full-time continuous employment, when compared to the reference group, have a decrease in assets of $26,330 in the Early-late cohort and a $26,174 in the Middle-late cohort. Full-time interrupted employment results in a decrease in assets of $30,124 in the Early-late cohort and $29,757 in the Middle-late cohort. This indicates that full-time interrupted employment is

associated with a greater decline in assets owned by the two age cohorts than having full-time continuous employment, relative to the reference group who has never been employed. Full-time continuous employment also statistically significantly decreases the dollar value of assets for unmarried women by $26,877 in the Late-late cohort. Unmarried women who have never worked may be widowed or divorced. These women may have accumulated assets based on their husbands' employment--not their own. Therefore, a woman who has never worked could accumulate a greater dollar value in assets than a woman who had full-time continuous or interrupted employment.

Summary and Conclusions

Testing for interaction of age, marital status and race with independent variables provides a model which best illustrates the effect of economic factors on income and assets for older women. Disaggregating the models by marital status and age allows for differing slopes of independent variables for married and unmarried women and for each cohort.

Economic factors have a statistically significant impact on income and asset amounts of women 65 years of age and over. Work history patterns statistically significantly decrease the dollar amount of assets owned by unmarried women in the Early-late and Middle-Late cohorts. Interrupted full-time employment is related to the greatest dollar decrease in assets relative to assets owned by the

reference group.

Education is an important indicator of retirement income and asset ownership, particularly for unmarried women. Low levels of education have a statistically significant negative effect on retirement income and assets for unmarried women 65 or over. Women with less than a high school education have lower income and asset amounts relative to women who have college educations. An unmarried woman who has a low education and an interrupted or dual work history pattern, when compared with the reference group, will have a statistically significant decrease in income and asset levels. The decline in the amount of income and assets associated with low education increase as age increases.

Income and asset accumulation decreases with age. At the same time that personal asset accumulation decreases the percent of women receiving Supplemental Security Income (SSI) increases. SSI and Social Security become increasingly important sources of income as women age. Savings remain the most important source of income over all three cohorts.

Marital status interacts statistically significantly with income and assets. Married women do not have as many variables which statistically significantly decrease their income and assets as unmarried women. This may be due to married women's reliance on the husbands' income and assets as they age. These decreases illustrate the importance of

education--especially for unmarried women--in relation to income and assets.

For unmarried women being white and in the Early-late cohort statistically significantly increases the dollar value of assets owned relative to the reference group. Married women in the Early-late cohort have a statistically significant increase in income when compared to the reference group of Middle-late cohorts. Being married and in the Early-late age cohort, when compared with the reference group, increases income and assets.

Over half of all income which is received by women 65 years of age and over comes from pensions and savings. Pensions contribute the largest share of income for the Early-late and Middle-late age cohorts. The Late-late cohort receives the greatest share of income from savings. The largest percentage of asset value is held in home equity. The Middle-late and Late-late cohorts hold 44.2% and 58.3%, respectively, in home equity. The Early-late cohort has the largest percentage of asset value in stocks.

In general, unmarried women's economic characteristics have a negative effect on asset amounts, while married women's economic characteristics have a statistically significant positive effect on asset amounts. Being in the younger cohort also statistically significantly increases the mean income and asset amounts of older women.

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FOOTNOTES

[1]The appropriate F statistic for the Chow Test is:

$$F = \frac{(SS\ Model_R - SS\ Model_{UR})/(df_R - df_{UR})}{MSE_R}$$

$Model_R$ is all independent variables plus interaction

terms for each independent variable with control

variable of interest.

$Model_{UR}$ is all independent without interaction terms.

If the calculated F statistic is greater than the critical

value of the F distribution at the .05 level, with the

specified degrees of freedom, there is statistically

significant explained variation between the two models.

Table 1

Summary of Variables

DEPENDENT VARIABLES

Income in dollars

INCOME
private pensions
Social Security
rent income
interest or dividends
Supplemental Security Income
farm operations
wages
savings
Individual Retirement/KEOGH Accounts
alimony
other sources no mentioned above

Assets value in dollars

ASSET
stocks
bonds
certificates of deposit
trussts
mutual funds
ownership of interest in a business
home equity
jewelry and paintings

ECONOMIC FACTORS

Educational Attainment of Older Women

FEDUC8	1=8th grade education or less;	0=other
FSOMEHS	1=some high school;	0=other
FHSGRAD	1=completed high school;	0=other
FVOCED	1=vocational training or some college;	0=other
FCOLGRAD	1=college graduate;(omitted)	0=other

Work History Patterns

NEVHIST	1=never worked;(omitted)	0=other
PTHIST	1=part-time work only;	0=other
FTHIST	1=full-time continuous work only;	0=other
INFTHIST	1=full-time interrupted work;	0=other
DHIST	1=both part-time and full-time work;	0=other

Table 1 Continued

Summary of Variables

SOCIODEMOGRAPHIC CHARACTERISTICS

Older Women's Cohorts

Early-late	1=65-69 years of age;	0=other
Middle-late	1=70-75 years of age;(omitted)	0=other
Late-late	1=75+ years of age;	0=other

Race

WHITE	1=white;	0=other

Marital Status

MARRIED	1=presently married;	0=other
NOTMAR	1=never married, divorced	0=other
	separated or widowed;(omitted)	

INCOME SOURCES[a]

PENSION	1=private pension income;	0=other
SSPEN	1=social security;	0=other
RENTINC	1=rent income;	0=other
INTINC	1=interest or dividend income;	0=other
SSIINC	1=Supplemental Security Income;	0=other
FARMINC	1=farm operations;	0=other
WAGEINC	1=wages	0=other
SAVINC	1=savings	0=other
IRAINC	1=Individual Retirement/KEOGH Account;	0=other
ALIMINC	1=alimony;	0=other
OTHERINC	1=other sources;	0=other

ASSET TYPES[a]

STOCK	1=stocks;	0=other
BOND	1=bonds;	0=other
CERT	1=certificates of deposit;	0=other
TRUST	1=trusts;	0=other
MUTFND	1=mutual funds;	0=other
OWNBUS	1=ownership or interest in a business;	0=other
OWNHOME	1=own house;	0=other
ARTINC	1=jewelry, paintings;	0=other

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[a] Used in descriptive analysis only.

Table 2

Percentage Distribution of Variables

	All Older Women %	Early- Late (65-69) %	Middle- Late (70-74) %	Late- Late (75+) %
ECONOMIC FACTORS				
Educational Attainment of Older Women				
8th grade or less	33.84	26.57	32.81	42.15
Some high school	19.47	14.29	24.22	19.83
Completed high school	25.87	34.13	24.22	19.01
Vocational training or some college	13.87	17.46	10.94	13.22
College graduate	7.73	7.94	8.59	6.61
Work History Patterns				
Never Worked	17.60	11.11	21.09	20.66
Part-time only	5.60	8.73	3.13	4.96
Full-time continuous	20.00	18.25	21.09	20.66
Full-time interrupted	39.20	38.10	37.50	42.15
Part-time and Full-time	17.60	23.81	17.19	11.57
SOCIODEMOGRAPHIC CHARACTERISTICS				
Race				
White	87.84	89.34	89.76	84.30
Nonwhite	12.16	10.66	10.23	15.71
Marital Status				
Currently Married	49.33	65.08	54.69	27.27
Unmarried	50.67	34.92	45.31	72.73

(table continues)

Table 2 Continued

Percentage Distribution of Variables

	All Older Women %	Early- Late (65-69) %	Middle- Late (70-74) %	Late- Late (75+) %
INCOME SOURCES[a]				
Pensions	88.89	82.89	88.75	93.75
Social Security	57.55	52.94	57.58	61.54
Rent income	13.49	17.11	10.00	13.54
Dividends	18.65	23.68	17.50	15.63
Farm income	7.14	3.95	16.25	2.08
Wages	16.27	32.89	18.75	1.04
Gift income	1.59	1.32	1.25	2.08
Savings Accounts	51.08	56.45	49.60	47.11
IRA and KEOGH Accounts	6.93	15.87	3.13	1.65
Alimony	4.38	5.26	6.25	2.11
SSI)	12.70	10.53	8.75	17.71
Other income	1.29	0.00	4.11	0.00
ASSET TYPES[a]				
Stocks	24.40	29.84	23.44	19.83
Bonds	19.20	21.43	17.97	18.18
Savings Certificates	38.40	46.03	35.16	33.88
Money Market Funds	58.16	55.17	65.12	55.00
Trusts	1.88	2.40	1.59	1.65
Mutual Funds	16.44	20.97	18.11	10.00
Own business	9.89	13.49	11.02	4.96
Own or buying home	73.81	80.26	77.50	65.63
Other assets	6.45	8.87	7.09	3.31

[a] represents the percent of women who recieve income from the indicated income source or asset type; therefore, the percentages can sum to greater than 100.

TABLE 3

Share of Income Received from Three Major Sources

	All Older Women %	Early-Late (65-69) %	Middle-Late (70-74) %	Late-Late (75+) %
Savings	83.87	90.67	77.12	68.37
Private Pensions	11.42	6.78	16.82	21.08
Government Pensions	4.71	2.55	6.06	10.54

TABLE 4

Percent of Income By Source

	All Older Women %	Early- Late (65-69) %	Middle- Late (70-74) %	Late- Late (75+) %
Wages	10.09	15.86	11.65	--[a]
Farm Income	2.45	1.41	3.33	3.25
Investment Income	7.12	8.52	5.91	6.07
Dividends	--	--	1.21	1.17
Sale of Assets	1.52	--	4.36	0.00
Gifts	--	--	--	--
SSI	1.34	--	1.07	2.86
IRA or KEOGH	6.93	13.04	2.24	1.78
Savings Accounts	23.65	17.32	22.38	34.34
Social Security	10.60	8.41	11.12	13.47
Pensions	28.94	23.67	33.80	32.66
Rent	6.04	9.18	2.53	4.34
Other Income	--	0.00	--	0.00

[a] Provides less than one percent of income.

TABLE 5

Share of Asset Value By Type

	All Older Women %	Early- Late (65-69) %	Middle- Late (70-74) %	Late- Late (75+) %
Savings Certificates	5.78	4.72	4.10	13.76
Money Market Funds	5.07	3.75	8.33	6.86
Home Equity	32.05	23.29	44.24	58.30
Bonds	6.98	9.36	--[a]	4.62
Mutual Funds	7.11	10.38	--	--
Stocks	25.56	32.04	14.55	9.17
Trusts	8.52	6.87	17.38	3.49
Own Business	8.08	8.68	8.95	3.69
Other Assets	1.39	1.35	2.40	--

[a] Provides less than one percent of asset value.

TABLE 6

Least Squares Regression Coefficients for Income

	Married	Unmarried
INTERCEPT	2,813.97	27,193.69*
EDUC8	-2,192.22	-20,681.83*
SOMEHS	2,868.71	-17,713.50*
HSGRAD	2,127.40	-14,657.57*
FVOCED	6,156.17	-15,331.53*
PTHIST	3,763.06	3,513.57
FTHIST	-4,657.18	-3,991.35
INTHIST	-1,689.08	-1,954.28
DHIST	535.51	-345.47
WHITE	6,071.75	1,166.11
EARLY-LATE	5,794.43*	2,057.39
MIDDLE-LATE	(omitted)	
LATE-LATE	1,569.21	-289.81
R^2	0.16	0.22
F	2.92*	4.41*

* Statistically significant at the .05 level.

TABLE 7

Least Squares Regression Coefficients for Assets

| | Early-Late | | Middle-Late | | Late-Late | |
	Married	Unmarried	Married	Unmarried	Married	Unmarried
INTERCEPT	27,705.28	68,339.81*	78,257.49	73,784.55*	39,458.12	78,911.05*
EDUC8	-70,316.93	-47,832.60*	-76,484.56	-48,691.37*	-47,093.37	-48,927.53*
SOMEHS	-68,323.02*	-42,479.29*	-74,856.36	-45,023.80*	-46,037.43	-46,485.38*
HSGRAD	39,580.25	-27,575.00*	41,569.38	-26,173.51*	64,436.51	-27,729.97*
FVOCED	181,514.97*	-18,424.68	178,951.13*	-17,562.21	217,795.53*	-19,496.79
PTHIST	-39,886.72	22,114.09	-20,511.75	22,497.86	-2,619.32	21,555.94
FTHIST	-97,697.97	-26,330.12*	-100,986.18	-24,598.79*	-82,073.72	-26,877.24*
INTHIST	33,711.90	-30,124.16*	42,789.97	-29,757.41*	49,364.69	-29,925.70
DHIST	-43,657.42	-27,263.45*	-21,255.47	-26,165.39*	-13,951.75	-28,785.48
WHITE	27,019.09	15,626.93*	29,124.68	15,393.75	27,414.38	14,505.25
EARLYLATE	91,061.15	18,248.00*				
MIDLATE			-46,681.02	-5,180.55		
LATELATE					-73,027.34	-8,282.24
R^2	0.21	0.29	0.18	0.27	0.19	0.27
F	4.49*	7.31*	3.81*	6.43*	3.95*	6.62*

* Statistically significant at the .05 level.

APPENDIX A

LITERATURE REVIEW

The literature is reviewed to examine the retirement
income and assets of women 65 years of age and older and the
effect work history patterns and human capital factors have
on income and assets in the retirement years. The review is
divided into three major topics - women and poverty, women
and pensions, and income and assets of women 65 and over.

Women and Poverty

Income statistics show the elderly, as a whole, have
made great financial gains in the past several years. In
1986 the median annual income of all households headed by
individuals 65 years of age and over is $19,932 (U.S. Census
Bureau, 1987a). The poverty rate of all individuals 65
years of age and over has dropped steadily since the 1960s.
The poverty rate which is reported for 1966 is 28.5%, for
1976 the poverty rate is 15%, and in 1986 the poverty rate
has dropped to 12.4% for persons 65 years of age and over
(U.S. Census Bureau, 1987a). These statistics can be
misleading because the elderly can not be grouped into one
homogenous group, they are a diverse group with diverse
needs (Schulz, 1985). If persons 65 and over are reported
as one group the needs of individuals at different ages and
the needs of special groups--such as women--are not fully

represented in the findings. The median annual income for a male headed household in which the household head is 65 years of age or older is $11,544 in 1986. A female headed householder 65 years of age or older receives a median annual income of $6,425 in 1986. Elderly women who do not have a husband experience poverty rates above those of the total population 65 years of age and over. Single, never married, or widowed women have a poverty rate of 23.1% for 1986. This is well above the 12.4% poverty rate for all persons over 65 years of age (U.S. Census bureau, 1987a).

Old age for many women is a time of economic hardship. Uhlenberg and Salmon (1986) noted that aging for many women involves two important sources of income drop--retirement and widowhood. Life expectancy of men is less than women; therefore, social and economic problems of the elderly are mostly women's problems. Old age is associated with female headed households, living alone, reduced income, and increased poverty (Tauber, 1983). In 1980, women comprised 70% of the elderly poor (Kahne, 1985). Over half of all poor are single women who have never been married or are widowed and who live alone (Estes et al, 1984, Schulz, 1985). "Older widows experience rates of poverty higher than both their married age peers and widowers" (Morgan, 1986, p.663). Kahne (1985) reports that one-fourth of all aged widows are poor. A study conducted by Morgan (1986) has determined that there is "... a strong association between the recency of widowhood and poverty, with much

higher probability of being poor for women most recently widowed" (p. 666). In 1982, 25% of all families headed by an individual 65 and over have annual incomes of less than $10,000, and 50% have annual incomes of $15,000 or less (Schulz, 1985). If an elderly individual lives alone they are more likely to have low retirement incomes than if they live in a family. Seventy-five percent of individuals living alone have an annual income of $10,000 or less, and 85% have annual incomes below $15,000 (Schulz, 1985). These statistics illustrate that elderly women have a greater chance of being poor--especially widowed women--than their male cohorts because a high proportion of older women live alone.

Other factors such as mortality rates, survivor options, and inability to work have an influence on the poverty rates of aging women. Research studies conclude that mortality rates of men and women influence income in later years (Bernstein, 1974; Heidbreder, 1972). Women usually outlive their spouses which causes them to lose some or all retirement benefits from their husbands' private pension plan (Morgan, 1986). Joint-and-survivor options are available under many retirement plans, but this option is usually not chosen because it lowers the amount of benefits paid to both spouses (Heidbreder, 1972). If the husband dies before retirement age, the widow receives a portion of the benefits if the plan has survivor benefits and if age and service requirements are met by the spouse

(Heidbreder, 1972). Pension benefits are shown to reduce
the poverty rates of older women. Eight percent of women 65
years of age and over who report receiving pension income
fell below the poverty level, compared to 22 percent of
women without benefits (Shaw, 1985). These statistics
illustrate the important relationship between pension
benefits and economic well-being of women during
retirement.

Another influence on older women's economic status is
that they receive lower social security benefits
(Bernstein, 1974; Morgan, 1986). In a study conducted by
Lingg (1982), findings indicate that 27% of husbands and
eight percent of wives drawing social security are entitled
to monthly benefits of $300 or more. Fourteen percent of
husbands and 36% of wives in the study are entitled to less
than $160 per month. Women receive lower benefits because
the amount of the benefit is based on either their earnings
records, or a portion of their husbands' earnings records,
depending upon which one pays higher benefits. At age 65 a
wife may choose to receive one half the benefits to which
her husband is entitled if that amount is higher than the
benefits available from her own earnings record. Usually
women receive higher benefits based on their spouses'
earnings records because of a lack of benefit credits due to
homemaking, or because of low earnings during earning years
(Heidbreder, 1972; Kahne, 1985). Women who are divorced
received Social Security benefits based on their former

spouses employment record if they have been married 10 years or more, and then they only received 50% of the benefits (Kahne, 1985).

The U.S. Bureau of the Census (1987b) reports that 92% of all wage and salary workers are eligible for Social Security benefits. Social security accounts for 38% of aggregate income of the elderly in 1984. For one out of every seven beneficiaries it is the only source of income. For the elderly poor Social Security provides 77% of their aggregate income (Ycas & Grad, 1987). Social security is not designed to provide the elderly with an income above the poverty threshold, but rather to provide a floor which is supplemented by pensions, assets and other income (Lingg, 1982; Horlick, 1987). If Social Security is the only income that elderly women receive, then they are sure to slip into poverty.

Inability to work also causes many elderly women to live below the poverty level. Findings from a study conducted by Kahne (1985) reveal that as age increases weekly earnings for both men and women decrease.

Poor money management is also cited as one reason for the large incidence of poverty among older women. A study conducted by Morgan (1986) found that 69.3% of the women studied have received no financial counseling after their spouses' death. The same study also found that having "...responsibility for handling finances during marriage made no significant difference in either the likelihood of

being poor or of reporting a decline in the standard of

living in widowhood" (p. 667).

Women and Pensions

Private pensions fail to adequately cover the needs of

women as they age. In a study conducted by Snyder (1986),

52% of all workers in private industry report being covered

by a pension plan. Sixty-four percent of male workers and

39% of female workers in private industry are covered by a

pension. Eighty-eight percent of government employees

report having pension coverage. Males employed by the

government have a coverage rate of 93%, females have a

coverage rate of 82%. Many women are not eligible for

pensions because they work in clerical, sales and service

jobs which are not covered by pension plans (Heidbreder,

1972; Szinovacy, 1982; Kahne, 1985). Fifty-five percent of

all women workers are employed in trade and service

occupations which have a 30% pension coverage rate (Snyder,

1986). If a woman chooses to work in the home she must

rely upon her husband's pension benefits for retirement

income, because there is no private or public pension system

set up for homemakers. If her husband dies, pension

benefits are lost unless the couple has joint-survivor

pension benefits. The law requires employers covered by

ERISA to offer this option to all couples when they sign up

for a pension plan (Bell & Graham, 1984). If the

joint-survivor option is chosen, upon the death of the

working spouse, the dependent spouse will receive an annuity

or a lump sum benefit payment. The amount of the payment depends on eligibility requirements and years of service before the employee's death. The spouse is only entitled to benefits if the employee met age and service requirements of the plan and if the couple is married for at least one year before death (Bell & Graham, 1984).

Twenty percent of women and 40% of men 65 years of age and older report receiving income from private or government employee pensions in 1981 (Shaw, 1985). This figure includes survivor pensions which are received on spouses' earnings. In 1983 of all workers 25 through 64, a higher percentage of women than men have reported employment in low coverage industries, in smaller firms, and without union contracts (Woods, 1986). The pension coverage rate of firms with less than 25 employees is 25%, compared with firms with 1,000 or more employees which have a coverage rate of 89% (U.S. Bureau of the Census, 1987). Pension plans reward workers based on length of service and amount of pay (Horlick, 1987). When women are covered by private pensions, greater discontinuities in employment, lower tenure on the job, earlier termination from jobs, and limited mobility due to occupational sex segregation adversely affect their vesting rights, service credits, and benefit levels (Kahne, 1985; Szinovacy, 1982).

Many private pension plans require 10 or more years of service with the company before vesting requirements are met (Heidbreder, 1972). Traditionally, work history

patterns of women show that 10 years of service with the same employer is not realistic because of women's discontinuous work patterns. Women's work history patterns are usually characterized by interruptions in labor force participation. Interrupted labor force participation slows the progress toward pension vesting and increases the risk of never achieving pension coverage. Interruptions also lead to lower wages on which retirement income is based (Szinovacy, 1982). Heidbreder states that "our society has encouraged such interruptions through emphasis on the role of women as homemakers and the lack of institutional alternatives such as day-care centers for young children or flexible work weeks" (p.53). Women encounter one or two family roles, due to childbearing, which affect employment patterns. The first is the early family role. In this role a woman starts a family at a young age which prevents her from acquiring the education needed for a high paying job. Since these women are still young when they finish childbearing they tend to have longer continuous employment patterns, but they receive lower paying jobs because of decreased educational attainment. The later family role, having children later in life, causes more career disruption. This role also carries with it a greater chance of age discrimination when a woman reenters the labor force. They also have lower retirement benefits than the first role because of lower continuous labor force participation rates (Lopata & Norr, 1980).

Women's work history patterns are found to have a great influence on their economic well-being during retirement years. "Increasingly, their economic well-being is more intimately tied to their work history than to their property rights based on marital status" (Kahne, 1985, p.2). Adequate income during retirement is tied to several important characteristics of previous work. Individuals who receive high retirement incomes tend to have worked steadily over many years, they tend to work in occupations characterized by high wages and fringe benefits, and they work in industries with good pension coverage, high benefit levels, and portability of credits (Szinovacy, 1982). Industries which have high pension coverage and vesting rates include government and public administration, finance, insurance, manufacturing, wholesale trade, transportation, communication, utilities, and professional services. Women workers are under represented in these occupations.

Education is also associated with the retirement income which a woman receives. Increased education leads to an increased likelihood of being employed, working more since leaving school, and higher earnings (Lopata et al., 1980) The monthly mean pension income of persons with a college degree is $950. A person with four years of high school receives a monthly mean pension income of $550 (U.S. Bureau of Census, 1987b). This difference is due in part to the difference in occupations and wage rates of persons with differing educational levels which are reflected in pension

benefits. Additionally, Szinovacy (1982) reports that women
with a college education spend 41% of their working life in
the labor force, while women with a high school education
spend 37% of their working life in the labor force. This
difference in time spent in the labor force affects pension
vesting and total dollar amount credited toward a worker's
pension so that individuals with lower labor force
participation rates receive low retirement income from
pensions. Uninterrupted service and higher wages provide a
higher dollar amount in Social Security and pension benefits
upon retirement (Szinovacy, 1982). In a study conducted by
Maxwell (1986) findings reveal that education is associated
with the receipt of interest and dividend income. The
higher an individual's educational level the more likely
they are to save for retirement; therefore, the higher their
asset income in retirement.

The Retirement Equity Act of 1984 has made pension law
coverage more equitable for women. Women can leave the work
force for up to five years without losing pension credits
from their employer. Women may also take maternity leave
for up to one year without any loss of pension credits
(Ruben, 1984). This change in pension laws makes it easier
for women to leave the work force for childbearing and
rearing, because it does not penalize them for a short break
in service for vesting and participation in pension plans.
The Retirement Equity Act also addresses widows' benefits.
If an employee dies after pension vesting then their spouse

is entitled to benefits upon retirement. Spouses must sign a benefit waiver if survivor benefits are not chosen, thereby protecting the spouse from being unaware that this option was not chosen. Divorced spouses are also entitled to benefits under this law if benefits are part of the divorce settlement (Ruben, 1984).

The Employee Retirement Income Security Act (ERISA) of 1974 has changed minimum standards which pension plans must meet regarding participation, accrual of benefits, vesting and funding. ERISA has changed vesting requirements so that they are more equitable for women. ERISA allows the employer to select one of three vesting plans for employees. The first plan is full vesting after 10 years of service. This is the traditional vesting period for most pension plans. The second plan allows 25% vesting after five years of service, increasing by five percent per year for five years, and then increasing by 10% the following five years. One hundred percent vesting would not take place for 15 years with this plan, but it would allow someone with discontinuous employment to become partially vested instead of losing all vesting credits during employment interruptions. The third vesting plan is known as the rule of 45. This plan provides 50% vesting when the combination of an employees years of service and age total 45, with a minimum service requirement of five years. For each additional year of service an employee receives 10% vesting until they reach full vesting (Sahin & Balcer, 1979; Schulz,

1985; Peck & Webster, 1985). ERISA also makes it possible for workers to establish Individual Retirement Accounts (IRA) which are exempt from Federal income tax until drawn upon at retirement (Schulz, 1985). Minimum funding standards for private pensions are established under this act to ensure adequate benefits which are promised to employees are available for payment at retirement (Schulz, 1985). ERISA mandates that employees can not be excluded from participation in pension plans if other workers of the same type are covered, if the employee is over 21 years of age and if they have completed at least one year of half time service. Under this act the pension plan must cover at least 70% of all non-highly compensated workers to receive a tax exempt status (Vavrichek, 1987).

The Tax Reform Act of 1986 changes vesting requirements outlined in ERISA. Beginning in 1989 two vesting options will be available. The first option gives workers a non-forfeitable right to 100% vesting of benefits after five years of service. The second option requires employees to be 20% vested after three years of service, and 100% vesting after seven years of service (Vavrichek, 1987). Both of these plans lower years of service requirements for pension vesting from the 10 years now required under ERISA. This will allow women with discontinuous labor force patterns to become vested in a shorter period of time; therefore, benefits will not be lost during interruptions.

Two general types of private pension plans used by

employers are defined contribution plans and defined benefit plans. In a defined contribution plan employers or employees contribute a specified amount of money into a pension fund. No predetermined level of retirement benefits is promised the employee, instead the size of benefit is based on the amount of money credited to the employee. The employer is only obligated to provide agreed upon benefits regardless of future economic conditions. A defined benefit plan provides a specified retirement benefit according to a formula which takes into account years of service, and/or earnings. Employers make contributions adequate to finance the formulated benefits (Bell & Hill, 1984; Vavrichek, 1987). When determining retirement benefits for both types of plans, an employer usually takes into account Social Security payments through the use of integrated and offset plans. Both integrated and offset plans reduce private pensions by a portion of the Social Security benefits received by the employee. In a study conducted by Bell and Hill (1984), of the 914 defined benefit pension plans studied, three-fifths are integrated. The amount of the reduction is fixed at the time of retirement so that changes in Social Security, through legislation or cost of living adjustments, do not affect payments for those already retired. Some employers also establish excess plans, which provide higher pension formulas for earnings above a specified level than for those below. Two-fifths of all plans studied by Bell and Hill (1984) are excess plans.

Since Social Security replaces a higher percent of preretirement earnings for low paid workers than highly paid workers, excess plans try to equalize the replacement rate by giving higher paid workers a larger percent of preretirement earnings. The Revenue Act of 1942 denies federal tax breaks to pension plans which discriminate in favor of highly paid employees with respect to coverage, benefits, or contributions (Bell & Hill, 1984). An employer can still use excess plans to calculate benefits as long as combined pension and Social Security replacement rates are not higher for employees earning more than the Social Security taxable wage base than for lower earners.

Replacement rates refer to the proportion of preretirement earnings replaced by pensions and/or Social Security which are typically figured on the basis of gross income (Strate, 1984). In 1983 the replacement rate of private pensions is 27% for blue collar workers, 30.7% for white collar workers, and 30.1% for technical and clerical workers—most of which are women (Bell & Marclay, 1987). The replacement rate of combined pension plans and Social Security is 55.2% for blue collar workers, 58.2% for white collar workers, and 58.3% for technical and clerical workers. Replacement rates for blue collar workers tend to decline as earnings increase with just the opposite pattern occurring for white collar workers (Bell & Marclay, 1987). Schulz (1985) concludes that a retired individual needs a rate of 65-70% of gross pre-retirement income for a middle

income worker. This amount should provide the retired worker with a retirement income which will maintain their level of living in old age, barring any catastrophic illnesses.

Income and Assets of Older Women

The currently accepted view of the economic status of the aged population is that it has improved relative to the non-aged (Radner, 1987; Quinn, 1983). From 1947 through 1967, non-aged incomes grew faster than aged incomes--two point six percent and one point one percent, respectively. From 1967 through 1984 incomes of the aged have grown at a faster rate than those of the non-aged--two point one percent and point six percent growth, respectively (Radner, 1987). Most of this growth in income received by the elderly is attributed to increased Social Security benefits. Radner (1987) found that the increase in Social Security accounts for 58% of the increase in incomes of people 65 to 74 years of age. He also found that 72% of the increase in incomes of persons 75 and over can be accounted for by the increase in Social Security. At the same time that Social Security payments to the elderly increased, the poverty rate for all people 65 years of age and over fell from 28.1% in 1967 to 12.4% in 1984 (Radner, 1987). Although the overall poverty rate fell for all people 65 and over, women are still over represented in the poor elderly population.

For older women, retirement usually involves a change in economic status from that of the working years. After

retirement, the incomes and asset level of most older women are substantially reduced from preretirement levels (Bloom, 1972). Six major sources of income for the elderly include 1) interest or dividends, 2)pensions or annuities, 3)employment, 4)selling assets, 5)social security, and 6)public assistance (Bloom, 1972; Gobeil, 1987) In a study conducted by Hurd and Shoven (1982), it was found that Social Security and private pensions are the primary sources of retirement income for the elderly.

Assets held by the elderly can be categorized into three groups, 1)home equity; 2)liquid assets, such as stocks bonds, and mutual funds; and 3) less liquid assets, such as business investments and real estate (Friedman & Sjogren, 1981). Several research studies have found that home equity comprises most of the asset value of the elderly (Friedman et al., 1981; Hurd et al. 1982). The U.S. Bureau of the Census (1986) reports that the largest percent of female householders 65 years of age or older hold interest earning assets at financial institutions (73%). Almost 66% of female householders hold assets in the form of home equity. Table A1 provides an overview of household wealth and asset ownership figures from the Bureau of the Census for all persons aged 65 and over and for female heads of household aged 65 and over. This table illustrates that female household heads aged 65 and over hold a smaller percent of all assets than the overall population of persons aged 65 and over.

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TABEL 8

Households Owning Asset Types By Selected Characteristics

Type of Asset	All People 65 and over %	Female Head 65 and over %
Interest Earning Asset at a financial institution	77.5	73.0
Own Home	73.0	65.5
Motor Vehicles	71.4	51.7
Checking Accounts	48.5	47.6
Stocks and Mutual Funds	21.1	15.8
Other Interest Earning Assets	11.6	8.3
U.S. Savings Bonds	11.3	8.3
Rental Property	10.8	9.6
IRA and KEOGH Accounts	8.5	3.8
Real Estate	8.4	4.5
Own Business or Professional Practice	5.1	2.1
Other Assets	2.9	1.9

Source: U.S. Bureau of the Census, Current Population
Reports (1986), Series P-70, No. 7.

TABLE 9

Summary of Interaction Variables

Marital Status

ED8MAR = EDUC8 * MARRIED;
SOMEMAR = SOMEHS * MARRIED;
HSMAR = HSGRAD * MARRIED;
VOCMAR = FVOCED * MARRIED;
PTHSTMAR = PTHIST * MARRIED;
FTHSTMAR = FTHIST * MARRIED;
INTHMAR = INTHIST * MARRIED;
DHSTMAR = DHIST * MARRIED;
WHTMAR = WHITE * MARRIED;
EARLYMAR = EARLYLATE * MARRIED;
LATEMAR = LATELATE * MARRIED;

Race

ED8WHT = EDUC8 * WHITE;
SOMEWHT = SOMEHS * WHITE;
HSWHT = HSGRAD * WHITE;
VOCWHT = FVOCED * WHITE;
PTHSTWHT = PTHIST * WHITE;
FTHSTWHT = FTHIST * WHITE;
INTHWHT = INTHIST * WHITE;
DHSTWHT = DHIST * WHITE;
WHTMAR = MARRIED * WHITE;
EARLYWHT = EARLYLATE * WHITE;
LATEWHT = LATELATE * WHITE;

Age

Early-Late

ED8YNG = EDUC8 * EARLYLATE;
SOMEYNG = SOMEHS * EARLYLATE;
HSYNG = HSGRAD * EARLYLATE;
VOCYNG = FVOCED * EARLYLATE;
PTHSTYNG = PTHIST * EARLYLATE;
FTHSTYNG = FTHIST * EARLYLATE;
INTHYNG = INTHIST * EARLYLATE;
DHSTYNG = DHIST * EARLYLATE;
EARLYWHT = WHITE * EARLYLATE;

TABLE 9 Continued

Summary of Interaction Variables

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Age (continued)

Middle-Late

```
ED8MID = EDUC8 * MIDLATE;
SOMEMID = SOMEHS * MIDLATE;
HSMID = HSGRAD * MIDLATE;
VOCMID = FVOCED * MIDLATE;
PTHSTMID = PTHIST * MIDLATE;
FTHSTMID = FTHIST * MIDLATE;
INTHMID = INTHIST * MIDLATE;
DHSTMID = DHIST * MIDLATE;
MIDWHT = WHITE * MIDLATE;
```

Late-Late

```
ED8OLD = EDUC8 * LATELATE;
SOMEOLD = SOMEHS * LATELATE;
HSOLD = HSGRAD * LATELATE;
VOCOLD = FVOCED * LATELATE;
PTHSTOLD = PTHIST * LATELATE;
FTHSTOLD = FTHIST * LATELATE;
INTHOLD = INTHIST * LATELATE;
DHSTMID = DHIST * LATELATE;
OLDWHT = WHITE * LATELATE;
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TABLE 10

<u>Least Squares Regression Interaction Coefficients for Race</u>

| | Income | | Assets | |
	Restricted	Unrestricted	Restricted	Unrestricted
INTERCEPT	-1,276.02	14,675.89*	-89,197.00	9,071.19
EDUC8	3,612.52	10,695.25*	92,550.33	-39,887.57
SOMEHS	2,329.62	-6,631.68*	89,563.91	-41,303.79
HSGRAD	7,593.06	-5,329.40	90,111.44	14,764.24
FVOCED	-3,431.38	-3,615.58	88,155.01*	85,039.68
PTHIST	3,584.19	5,250.90	-4,428.00	12,824.17
FTHIST	7,062.68	-4,324.51	1,067.78	-38,395.07
INTHIST	5,830.01	-3,553.49	-427.50	10,265.18
DHIST	3,609.69	614.74	3,829.45	-16,279.93
WHITE	19,730.77	3,224.48	124,691.89	27,098.87
MARRIED	-999.09	-2,183.78	-4,184.47	29,061.77
EARLY-LATE	-3,691.45	5,303.44*	4,132.89	61,334.76*
LATE-LATE	-2,080.68	1,885.93	1,074.66	-1,611.98
ED8WHT	-15,069.04		-137,731.63	
SOMEWHT	-8,622.49		-129,867.71	
HSWHT	-13,098.18		-75,255.07	
PTHSTWHT	1,422.59		9,469.02	
FTHSTWHT	-12,196.56		-42,383.94	
INTHWHT	-10,581.68		9,091.27	
DHSTWHT	-3,468.07		-24,836.87	
WHTMAR	-931.52		36,663.60	
EARLYWHT	9,612.65			
LATEWHT	3,949.87			
R^2	0.15	0.13	0.15	0.14
F	2.86*	4.64*	2.86*	5.02*

* Statistically significant at the .05 level.

TABLE 11

<u>Least Squares Regression Interaction Coefficients for</u>
<u>Marital Status</u>

	Income		Assets	
	Restricted	Unrestricted	Restricted	Unrestricted
INTERCEPT	27,193.69*	14,675.89*	68,910.71	9,071.19
EDUC8	-20,681.83*	-10,695.26*	-47,854.66	-39,887.57
SOMEHS	-17,713.50*	-6,631.68*	-42,586.63	-41,303.80
HSGRAD	-14,657.57*	-5,329.40	-27,646.04	14,764.24
FVOCED	-15,331.53*	-3,615.58	-18,522.24	85,039.68*
PTHIST	3,513.57	5,250.90	22,066.21	12,824.17
FTHIST	-3,991.35	-4,324.51	-26,437.48	-38,395.07
INTHIST	-1,954.28	-3,553.50	-30,129.58	10,265.18
DHIST	-345.47	614.74	-27,396.32	-16,279.93
WHITE	1,166.11	3,224.48	15,575.50	27,098.87
MARRIED	-24,379.71*	-2,183.78	-39,405.64	29,061.77
EARLY-LATE	2,057.39	5,303.44*	17,824.93	61,334.76*
LATE-LATE	-289.81	1,885.93	-687.54	-1,611.98
ED8MAR	18,489.61*		-15,191.70	
SOMEMAR	20,582.21*		-18,594.20	
HSMAR	16,784.97*		72,698.80	
VOCMAR	21,487.70*		209,494.63*	
PTHSTMAR	249.49		-58,154.45	
FTHSTMAR	-665.84		-66,600.53	
INTHSTMAR	-4,234.79		65,184.12	
DHSTMAR	880.98		-15,103.81	
WHTMAR	4,905.65		10,973.11	
EARLYMAR	3,737.05		63,158.64	
LATEMAR	1,859.02		-29,510.04	
R^2	0.18	0.13	0.29	0.14
F	3.37*	4.64*	4.47*	5.02*

* Statistically significant at the .05 level.

TABLE 12

Least Squares Regression with age Interaction for Income:
Early-Late Cohort

| | Married | | Unmarried | |
	Restricted	Unrestricted	Restricted	Unrestricted
INTERCEPT	10,669.67	2,907.50	23,863.46*	26,953.04*
EDUC8	-6,746.59	-1,814.41	-15,913.25*	-20,672.53*
SOMEHS	-3,384.20	3,239.85	-14,127.00*	-17,668.25*
HSGRAD	-3,457.76	2,411.78	-9,180.95*	-14,627.63*
FVOCED	-946.35	6,647.62	-10,427.48*	-15,290.41*
PTHIST	9,902.54	3,960.45	-4,325.71	3,533.75
FTHIST	-5,190.20	-4,415.03	-5,264.83	-3,946.09
INTHIST	-3,494.64	-6,119.31	-2,183.32	-1,952.00
DHIST	-3,667.23	595.65	-1,245.19	-289.47
WHITE	2,695.36	6,047.31	832.03	1,187.78
EARLY-LATE	-17,484.14	5,270.76*	1,078.00	2,235.72
ED8YNG	11,025.13		-7,283.72	
SOMEYNG	17,234.53		3,318.06	
HSYNG	13,228.65		-9,633.75	
VOCYNG	15,323.00		-9,970.08	
PTHSTYNG	-6,042.24		28,287.50*	
FTHSTYNG	8,178.17		8,955.67	
INTHYNG	-2,639.18		3,794.04	
DHSTYNG	8,014.55		6,998.77	
WHTYNG	9,310.05		2,424.72	
R^2	0.20	0.16	0.27	0.22
F	2.22*	3.21*	3.28*	4.87*

* Statistically Significant at the .05 level.

TABLE 13

<u>Least Squares Regression with Age Interaction for Assets:</u>
<u>Early-Late Cohort</u>

| | Married | | Unmarried | |
	Restricted	Unrestricted	Restricted	Unrestricted
INTERCEPT	43,876.92	27,705.28	49,988.59*	68,339.81*
EDUC8	-40,091.64	-70,316.93	-32,525.16*	-47,832.60*
SOMEHS	-34,215.55	-68,323.02*	-29,618.99*	-42,479.29*
HSGRAD	25,978.50	39,580.25	-7,132.13	-27,575.00*
FVOCED	14,692.72	181,514.97*	6,377.51	-18,424.68*
PTHIST	-75,369.46	-39,886.72	-3,264.95	22,114.09
FTHIST	-27,520.11	-97,697.97	-16,685.56	-26,330.12*
INTHIST	-306.78	33,711.90	-23,050.00*	-30,124.16*
DHIST	-22,189.57	-43,657.42	-24,067.53*	-27,263.45*
WHITE	13,156.93	27,019.09	13,574.01	15,626.93*
EARLY-LATE	-13,884.92	91,061.15*	55,551.56	18,248.00*
ED8YNG	-79,161.00		-14,856.04	
SOMEYNG	-65,233.97		30,090.62	
HSYNG	23,360.17		-22,205.19	
VOCYNG	344,927.28*		-43,424.42	
PTHSTYNG	113,255.11		90,873.38*	
FTHSTYNG	-200,281.86		-36,334.38	
INTHYNG	99,939.94		-30,713.20	
DHSTYNG	-27,050.97		-16,739.54	
WHTYNG	72,472.66		-722.59	
R^2	0.32	0.21	0.40	0.29
F	4.11*	4.49*	5.71*	7.31*

* Statistically significant at the .05 level.

TABLE 14

Least Squares Regression with Age Interaction for Income:
Middle-Late Cohort

| | Married | | Unmarried | |
	Restricted	Unrestricted	Restricted	Unrestricted
INTERCEPT	786.92	7,383.52	28,501.42*	27,609.00*
EDUC8	1,314.53	-2,702.91	-23,991.03*	-20,787.92*
SOMEHS	11,742.28	2,349.00	-22,214.20*	-18,022.51*
HSGRAD	7,171.41	1,995.02	-16,338.52*	-14,470.86*
FVOCED	12,744.70*	5,699.32	-21,851.07	-15,209.81*
PTHIST	6,619.49	4,355.02	5,973.83	3,568.30
FTHIST	-4,748.32	-4,959.24	-2,753.87	-3,758.22
INTHIST	-6,242.10	-5,895.11	-125.72	-1,907.10
DHIST	2,282.69	1,342.87	1,342.89	-189.40
WHITE	6,469.98	6,169.65	2,349.90	1,143.06
MIDLATE	7,136.03	-4,490.83	-15,122.86	-454.20
ED8MID	-6,573.48		19,738.39*	
SOMEMID	-19,129.88*		21,010.71*	
HSMID	-8,001.28		14,051.24	
VOCMID	-18,180.81		27,053.06*	
PTHSTMID	-15,177.84		-10,695.39	
FTHSTMID	2,238.99		-3,244.28	
INTHMID	2,529.53		-4,928.94	
DHSTMID	-2,039.58		-2,487.65	
WHTMID	-1,848.71		-736.94	
R^2	0.20	0.15	0.27	0.21
F	2.12*	3.03*	3.23*	4.74*

* Statistically significant at the .05 level.

TABLE 15

Least Squares Regression with Age Interaction for Assets:
Middle-Late Cohort

| | Married | | Unmarried | |
	Restricted	Unrestricted	Restricted	Unrestricted
INTERCEPT	70,773.68	78,257.49	64,513.12*	73,784.55*
EDUC8	-124,612.31	-76,484.56	-48,223.36*	-48,691.37*
SOMEHS	-98,559.75	-74,856.36	-39,565.62*	-45,023.80*
HSGRAD	47,365.67	41,569.38	-23,812.20	-26,173.51*
FVOCED	206,054.30*	178,951.13*	-36,140.09*	-17,562.21
PTHIST	-20,638.08	-20,511.75	41,671.33*	22,497.86
FTHIST	-148,494.73	-100,986.18	-16,103.89	-24,598.79*
INTHIST	71,072.94	42,789.97	-20,772.94*	-29,757.41*
DHIST	-46,483.35	-21,255.47	-21,357.11	-26,165.39*
WHITE	53,467.28	29,124.68	18,907.60	15,393.75
MID-LATE	-37,932.09	-46,681.02	-25,163.16	-5,180.55
ED8MID	96,335.63		24,047.38	
SOMEMID	64,318.09		8,466.31	
HSMID	8,017.71		9,999.65	
VOCMID	-189,058.07		67,297.78*	
PTHSTMID	-84,794.60		-62,129.02	
FTHSTMID	134,250.09		-14,969.23	
INTHMID	-75,966.64		-14,675.61	
DHSTMID	36,653.07		-5,627.09	
WHTMID	-36,259.58		10,694.40	
R^2	0.22	0.18	0.38	0.27
F	2.48*	3.81*	4.27*	6.43*

* Statistically significant at the .05 level.

TABLE 16

Least Squares Regression with Age Interaction for Income: Late-Late Cohort

| | Married | | Unmarried | |
	Restricted	Unrestricted	Restricted	Unrestricted
INTERCEPT	791.93	3,526.12	26,807.43*	28,347.94*
EDUC8	-36.55	-1,050.77	-19,166.43*	-20,805.66*
SOMEHS	2,964.22	3,952.23	-14,124.16*	-18,163.50*
HSGRAD	4,506.92	3,514.32	-14,877.50*	-14,667.26*
FVOCED	8,064.24	8,075.39	-10,792.83	-15,444.02*
PTHIST	3,594.87	6,157.79	10,896.39	3,454.67
FTHIST	-1,232.74	-3,872.68	-3,390.26	-4,042.10
INTHIST	-5,293.60	-5,165.18	-3,342.85	-1,930.75
DHIST	4,548.56	2,578.17	106.30	-505.81
WHITE	8,140.83	6,133.70	387.16	1,042.58
LATE-LATE	15,854.63	-1,495.29	-2,049.54	-1,166.41
ED8OLD	-10,586.88		-82.28	
SOMEOLD	1,917.63		-5,180.44	
HSOLD	-3,481.29		5,405.30	
VOCOLD	-11,021.76		-8,538.31	
PTHSTOLD	23,522.58		-14,712.35	
FTHSTOLD	-10,679.62		-2,311.89	
INTHOLD	1,579.33		2,983.79	
DHSTOLD	-10,514.47		778.87	
WHTOLD	-9,975.33		2,085.90	
R^2	0.19	0.13	0.26	0.21
F	1.99*	2.64*	3.01*	4.79*

* Statistically significant at the .05 level.

TABLE 17

Least Squares Regression with Age Interaction for Assets:
Late-Late Cohort

| | Married | | Unmarried | |
	Restricted	Unrestricted	Restricted	Unrestricted
INTERCEPT	22,898.98	39,458.12	104,819.24*	78,911.05*
EDUC8	-53,184.44	-47,093.37	-61,290.23*	-48,927.53*
SOMEHS	-68,869.97	-46,037.43	-61,046.19*	-46,485.38*
HSGRAD	56,639.12	64,436.51	-45,744.44*	-27,729.97*
FVOCED	290,917.36*	217,795.53*	-24,622.91	-19,496.79
PTHIST	45,066.79	-2,619.32	26,056.65	21,555.94
FTHIST	-121,898.13	-82,073.72	-47,098.49*	-26,877.24*
INTHIST	62,820.89	49,364.69	-46,490.53*	-29,925.70*
DHIST	2,779.22	-13,951.75	-38,749.37*	-28,785.48*
WHITE	37,241.62	27,414.38	13,632.77	14,505.25
LATE-LATE	-45,842.65	-73,027.34	-67,558.34*	-8,282.24
ED8OLD	69,546.45		30,758.73	
SOMEOLD	109,758.05		42,278.15	
HSOLD	-59,124.65		46,335.07	
VOCOLD	-216,724.06		10,452.19	
PTHSTOLD	-95,520.31		-16,536.22	
FTHSTOLD	148,656.78		45,008.82	
INTHOLD	-49,657.59		36,535.23	
DHSTOLD	-35,955.64		21,121.12	
WHTOLD	-34,037.74		1,078.42	
R^2	0.23	0.19	0.33	0.27
F	2.64*	3.95*	4.35*	6.62*

* Statistically significant at the .05 level.

VITA

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