Relative Non-Labor Income and Retirement Satisfaction

Blain Pearson, Ph.D., CFP®, Coastal Carolina University[1]
Thomas Korankye, Ph.D., CFP®, The University of Arizona[2]
Yi Liu, Ph.D., CFP®, St. John Fisher University[3]

Objective

This study examines the role of non-labor income relative to net worth in shaping retirement satisfaction. Specifically, the authors create a ratio comparing income from annuities, pensions, and social security to net worth to observe the role of non-labor income relativity and its contribution to financial stability and quality of life during retirement. Further, we attempt to answer if consistent non-labor income can reduce financial anxiety associated with market fluctuations or economic downturns, which typically affect net worth. In this regard, retirees may feel more secure when they have guaranteed income sources independent of market outcomes, directly impacting overall well-being and life satisfaction. Plainly, the objective of this study is to test if non-labor income relative to net worth is associated with retirement satisfaction.

Significance

Studies consistently highlight financial security as a primary determinant of retirement satisfaction. Non-labor income provides a stable cash flow that helps retirees manage living expenses and aids in avoiding reliance on savings (Liu et al., 2023; Korankye et al., 2024; Pearson et al., 2024). For example, research by Kim and Moen (2001) suggests that retirees with sufficient non-labor income report greater financial confidence due to reduced dependence on asset drawdown. Moreover, a steady income may give retirees an increased sense of assurance in their ability to meet essential and discretionary needs, a factor strongly linked to higher life satisfaction in retirement (Atchley, 1999; Pearson & Lacombe, 2021; Rowena et al., 2023; Sterbenz et al., 201). Further, the ability to maintain a desired lifestyle post-retirement is also positively associated with non-labor income. According to Wong and Earl (2009), retirees who have income from passive sources are more likely to engage in social, leisure, and travel activities, significantly contributing to retirement satisfaction. Lifestyle maintenance often becomes a priority for retirees who seek to cover basic needs and pursue fulfilling activities, and non-labor income can support this goal without the need to accumulate a large amount of assets.

Dependable non-labor income is also a risk management tool when considering the potential of outliving one's saved resources, or "longevity risk." Non-labor income, especially from sources like pensions or annuities, acts as a financial hedge in the event one lives past their life expectancy. For instance, Hurd and Rohwedder (2008) emphasize that non-labor income is essential for managing longevity risk, as it provides a continuous revenue stream that mitigates the pressure to liquidate assets in late-life. In addition, the assurance to meet essential and discretionary needs may alleviate financial anxiety during retirement. For example, research by Joo and Grable (2004) finds that retirees with consistent non-labor income experience lower levels of financial worry, resulting in enhanced psychological well-being.

Non-labor income sources also offer a degree of diversification that can protect against inflation, a significant factor as retirees face rising costs over time, particularly in healthcare. Inflation-protected income, like Social Security or inflation-adjusted pensions, can preserve purchasing power, enhancing retirees' ability to maintain their quality of life despite economic changes. According to a study by Bender (2012), retirees with diversified income sources, including passive income, can better navigate inflation, which may contribute to greater satisfaction and stability over the long term. In this regard, the impact of non-labor income on retirement satisfaction may also vary across socioeconomic groups. Lower-wealth retirees may benefit from non-labor income in covering basic needs, while higher-wealth retirees use it to sustain a more affluent lifestyle. Consequently, non-labor income plays a more significant role in

[1] Blain Pearson (bpearson@coastal.edu), Assistant Professor of Finance, Department of Finance and Economics
[2] Thomas Korankye (korankye@arizona.edu), Assistant Professor of Financial Planning, Personal and Family Financial Planning
[3] Yi Liu (yliu@sjfc.edu), Assistant Professor of Finance, Department of Accounting and Finance

retirement satisfaction for those with less total wealth, as they rely more heavily on stable income to supplement limited savings.

The primary objective of this study is to investigate the relationship between non-labor income relative to net worth and retirement satisfaction. While the benefits of guaranteed non-labor income are well documented (Feng et al., 2022; Korankye et al., 2023; Lambregts & Schut, 2020; Liu et al., 2024; MacDonald et al., 2013; Pearson et al., 2025), few studies have empirically quantified its impact relative to wealth. Specifically, this study aims to determine how the proportion of income that does not rely on active labor influences retirees' overall satisfaction. In other words, our objective is to answer whether a higher proportion of non-labor income relative to net worth enhances feelings of financial security and mitigates common retirement concerns, such as outliving resources. By analyzing potential psychological impacts, like reduced stress or anxiety, due to a steady flow of passive income, thus enhancing overall well-being in retirement.

Methods

Panel data from the Health and Retirement Study (HRS) are examined to examine the association between relative non-labor income and retirement satisfaction. Specifically, the data examined are biennial data from the 1992 to the 2018 RAND HRS longitudinal file. Data and other information provided by the HRS are collected through survey questions and recorded responses. The purpose of the data collection effort is to provide data for research on health and aging in the United States. The HRS has a participation sample of approximately 20,000 and conducts data collection at both the respondent and household levels.

To focus solely on retirees, the subset of HRS respondents who answer “retired” when asked, “Are you working now, temporarily laid off, unemployed and looking for work, disabled and unable to work, retired, a homemaker, or what?” Observations with responses other than “retired” and missing values are dropped. As an additional measure, retirees who report earned income are dropped from this sample.

The sample is refined further when we consider only respondents who have non-labor income sources. In addition, our primary explanatory variable of interest utilizes a logarithm, as noted later. Logarithms are the inverse of exponential function, and the base of a logarithm can be any positive number except 1. Consequently, we exclude retirees who have a negative net worth, which is discussed later in the paper. After non-response values are dropped, the resulting sample size is N = 7,143.

The dependent variable of interest is retirement satisfaction. Retirees are asked by the HRS to rank their level of retirement satisfaction between 1 and 3, with 3 representing “not at all satisfied,” 2 representing “moderately satisfied,” and 1 representing “very satisfied.” To increase the intuitive understanding of the results, this variable is reverse recoded to take the form of 1 representing “not at all satisfied,” 2 representing “moderately satisfied,” and 3 representing “very satisfied.”

Two separate models are analyzed and thus two primary explanatory variables of interest are considered. The first is defined as Ratio 1. Ratio 1 measures the respondents non-labor income relative to net worth. In this study, we defined non-labor income as income received from the following sources: Social security income, spousal security income, annuity income, spousal annuity income, pension income, and spousal pension income. Passive income sources, such as income received from dividends, interest income, and rental income, are not considered due to the interaction with denominator of the ratio. For example, we do not have the data to isolate how dividends received from stock ownership are either reinvested or are treated as an income source by the respondents.

Ratio 2 uses the same numerator as Ratio 1; however, the denominator is non-housing wealth. Non-housing wealth is typically more liquid, and thus it can more easily be accessed to cover expenses or pursue hobbies and travel. Consequently, we create a new model with Ratio 2 serving as the primary explanatory variable.

Ratio 1

$$\log\left(\frac{Non-Labor\ Income}{Networth}\right)$$

Ratio 2

$$\log\left(\frac{Non-Labor\ Income}{Non-Housing\ Wealth}\right)$$

We examine the association between Ratio 1 and Ratio 2 with retirement satisfaction using two separate random-effects models. Random effects models are ideal for data that has a multi-level or hierarchical structure. This allows for within-group correlation by accounting for group-specific variations while still estimating the effects of predictors at a population level. When individuals have unique but unobserved characteristics, random effects models help capture these differences by assuming that the effects of these units are random.

The dependent variable for both models is retirement satisfaction. The independent variable of interest for Model 1 and Model 2 are Ratio 1 and Ratio 2, respectively. The natural logarithm of these ratio is utilized due to the variance of the error term increasing with the level of a variable. Using a natural logarithm reduced the heteroskedasticity by compressing the scale of the larger values, leading to a more stable variance across observations. For instance, one non-logged Ratio 1 observation resulted in value of 516. Meaning, the retiree had a significantly large amount of non-labor income relative to net worth. Logarithmic transformation compresses large values, bringing the extreme values closer to the rest of the data. Consequently, this aids in handling outliers and improves the robustness of the model by making it less sensitive to very large observations.

Control variables included in the models include: age, age^2, whether the respondent was married compared to unmarried, years of education, whether the respondent was male compared to female, whether the respondent was white compared to non-white, and health as a categorical variable with “poor health” serving as the base outcome to which “fair,” “good,” “very good,” and “excellent” are compared. *The explanation of the control variables can be found in the full manuscript.*

Results

The study’s results indicate a strong, positive association between the ratio of non-labor income relative to net worth and retirement satisfaction. Retirees with a higher share of non-labor income sources, as defined in this study, is associated significantly higher levels of satisfaction in various areas of retirement life. This effect is found when considering both the role of non-labor income relative to net worth and non-housing wealth. The magnitude of the marginal effects were strong when net worth served as the denominator in the relativity equation, compared to non-housing wealth.

Other analyses, such as descriptive statistics and other econometric tests, are in the full manuscript and were cut for purposes of meeting the page limitation. For brevity of the ACCI submission, only the primary results are discussed in this submission.

Conclusions/Relevance

This study finds that that non-labor income, when proportionately higher relative to net worth or non-housing wealth, has a significant positive association with retirement satisfaction. Retirees who rely more on stable non-labor income sources, such as Social Security, annuities, and pensions, report higher levels of satisfaction. This finding highlights that dependable income streams reduce retirees' reliance on fluctuating asset values, easing financial anxiety and promoting a sense of security and well-being. On the other hand, retirees who are dependent on assets, like investments or property, may face increased anxiety due to factors such as market volatility, especially in economic downturns. By contrast, regular non-labor income sources provide consistent financial support, contributing to a greater sense of security and mental well-being. This distinction is critical because it shows that not only wealth but the structure of wealth impacts retirees’ quality of life.

The study is relevant because it underscores the importance of stable, predictable income sources in retirement, particularly for individuals concerned about outliving their assets or those with retirement assets that are vulnerable to market volatility. By focusing on the proportion of non-labor income relative to net worth, the study brings new insight into how retirees' financial structures, rather than total wealth alone, impact satisfaction. This is especially valuable for policymakers, financial planners, and retirees as it suggests strategies for improving retirement well-being through income diversification and reliance on secure, non-labor income. For financial planners, the study reinforces the recommendation to prioritize income stability through annuities or other reliable income sources when crafting retirement plans. This approach can reduce the psychological stress that comes with the unpredictability of asset drawdown, aligning retirement satisfaction more with guaranteed income streams. For policymakers, the findings emphasize the value of maintaining and even expanding public retirement benefits, such as Social Security. In an era of rising costs and longer lifespans, ensuring

access to these benefits could become a critical tool for enhancing retirement satisfaction and financial resilience for future retirees.

The research is particularly relevant in a broader economic context marked by rising longevity and healthcare costs, which challenge the sustainability of purely savings-based retirement planning. For instance, this study shows that a higher proportion of non-labor income can mitigate longevity risk by providing an income stream that lasts as long as the individual lives, unlike savings which may deplete over time. This has important implications in addressing retirees' fear of financial insecurity in old age. Further, this result can guide both individual and societal strategies for managing retirement resources, advocating for more substantial use of products like annuities, which can serve as a hedge against the risk of outliving savings.

The research connects financial structure to psychological well-being, illustrating that reliable income is not just a financial asset but also a psychological one. The regular cash flow from non-labor sources helps reduce retirees' stress over market risks and supports their ability to focus on personal interests, leisure, and family—activities that enhance retirement satisfaction. Additionally, the study supports the "mental accounting" theory in behavioral economics, which suggests that people assign different values to money sources based on factors like predictability. Stable non-labor income is mentally categorized as "spendable," enhancing satisfaction by enabling retirees to plan confidently without the fear of destabilizing their financial position, reinforcing the findings from Bennetts et al. (2024).

Methodologically, this study's use of ratios, which compare non-labor income to net worth or non-housing wealth, provides a more refined view of retirement income sources. This ratio-based approach could inspire future research to discover how different income-to-wealth ratios impact satisfaction, which could lead to the development of new metrics for evaluating financial readiness for retirement. Moreover, this study's use of the Health and Retirement Study (HRS) panel data from 1992-2018 allows for a comprehensive look at how these dynamics have evolved over time, capturing shifts in retirement patterns and financial concerns across decades. This long-term view gives depth to the findings and allows stakeholders to anticipate future trends.

Overall, this study reinforces the critical role of stable non-labor income in enhancing retirement satisfaction, suggesting that both financial planning and policy could benefit from a stronger focus on income predictability over purely asset-based retirement planning. By demonstrating the positive psychological effects of reliable income, the study highlights an opportunity to redefine retirement security as not only wealth accumulation but also income reliability, which can help retirees navigate the uncertainties of retirement with confidence and satisfaction.

Tables

Table 1 - Housing Net Worth Marginal Effects

	Not at all Satisfied	Moderately Satisfied	Very Satisfied
log(Non-Housing/Net Worth)	-0.0395*** (0.0083)	-0.0157*** (0.0035)	0.0552*** (0.0115)
Age	-0.0077 (0.0063)	-0.003 (0.0025)	0.0107 (0.0088)
Age2	0 .0001 (0.0001)	0.0000 (0.0001)	-0.0001 (0.0001)
Married	-0.0487*** (0.0133)	-0.0193*** (0.0055)	0.068*** (0.0185)
Education (Years)	0.001 (0.0017)	0.0004 (0.0007)	-0.0015 (0.0024)
Male (Female as Reference)	-0.0108 (0.011)	-0.0043 (0.0044)	0.0151 (0.0154)
White (Non-White as Reference)	-0.0053 (0.0116)	-0.0021 (0.0046)	0.0074 (0.0162)
log(Wealth)	-0.0492*** (0.0075)	-0.0195*** (0.0033)	0.0686*** (0.0103)
Health (Poor as Base Outcome)			
Fair	-0.0931*** (0.0167)	-0.0027 (0.0037)	0.0957*** (0.0159)
Good	-0.14*** (0.017)	-0.0235*** (0.0059)	0.1635*** (0.018)
Very Good	-0.1925*** (0.0174)	-0.0744*** (0.0124)	0.267*** (0.0241)
Excellent	-0.2158*** (0.0197)	-0.1126*** (0.0249)	0.3284*** (0.0393)

Data from the 1992-2018 Health and Retirement Survey
N = 7,143
Significance is defined as follows:
* Significant at $p < 0.05$; ** significant at $p < 0.01$; *** significant at $p < 0.001$

Table 2 - Non-Housing Net Worth Marginal Effects

	Not at all Satisfied	Moderately Satisfied	Very Satisfied
log(Non-Housing/Non-Housing Wealth)	-0.0141**	-0.0058**	0.0198**
	(0.005)	(0.0021)	(0.007)
Age	-0.008	-0.0033	0.0112
	(0.0063)	(0.0026)	(0.0089)
Age^2	0 .0001	0.0000	-0.0001
	(0.0001)	(0.0001)	(0.0001)
Married	-0.0435**	-0.0178**	0.0613**
	(0.0134)	(0.0057)	(0.0189)
Education (Years)	-0.0011	-0.0005	0.0016
	(0.0017)	(0.0007)	(0.0024)
Male (Female as Reference)	-0.0118	-0.0048	0.0166
	(0.0111)	(0.0046)	(0.0157)
White (Non-White as Reference)	-0.0063	-0.0026	0.0088
	(0.0118)	(0.0048)	(0.0166)
log(Wealth)	-0.0257***	-0.0105***	0.0362***
	(0.0045)	(0.002)	(0.0063)
Health (Poor as Base Outcome)			
Fair	-0.0931***	-0.0027	0.0958***
	(0.0171)	(0.0038)	(0.0163)
Good	-0.1409***	-0.0245***	0.1654***
	(0.0173)	(0.0061)	(0.0184)
Very Good	-0.1889***	-0.071***	0.2599***
	(0.0179)	(0.0124)	(0.0244)
Excellent	-0.2158***	-0.1152***	0.331***
	(0.0199)	(0.0252)	(0.0395)

Data from the 1992-2018 Health and Retirement Survey
N = 7,143
Significance is defined as follows:
* Significant at $p < 0.05$; ** significant at $p < 0.01$; *** significant at $p < 0.001$

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