

# Incomes in the transition to retirement: Evidence from Canada

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## **Abstract**

Countries around the world are considering an increase to retirement ages in response to fiscal and demographic pressure on social security systems. However, concern may arise about the impact of such reforms on those who retire before the age of full social security entitlement. This paper addresses the question of how those stopping work before the age of benefit entitlement source their incomes and the extent to which they are able to avoid economic hardship. To do so, I study panels of Canadian men between 1993 and 2008 drawn from the Survey of Labour and Income Dynamics. The data allow a very detailed composition of income by source using a high-quality income survey with annual information. These data are employed to make a novel calculation—determining the contribution of various supplemental income sources to lifting those not working at older ages out of a position of hardship. I find that demographic, health, and job characteristics are not very predictive of early retirement, and that those who retire early before the age of public pension entitlement are a very diverse group. Over half of the early retiring men I study who initially seem to suffer hardship before benefit entitlement are lifted out of hardship when other resources are accounted for.

## 1.0 Introduction

Countries around the world are considering an increase to retirement ages in response to fiscal and demographic pressure on social security systems. For example, the United States is moving the age of full Social Security entitlement from age 65 to age 67 for birth cohorts born between 1938 and 1960.<sup>1</sup> Similar changes are planned in Germany, and have been proposed in France. These moves are in response to fiscal pressures generated by the divergence between retirement ages, which have generally declined over the past generation, and life expectancy, which has increased. In simulations using data from 12 countries, Gruber and Wise (2007) show that raising retirement ages can improve social security finances both by mechanically saving some years of pension payout and also by inducing more work from those nearing retirement.

However, concern may arise about the impact of such reforms on those who retire before the age of full social security entitlement. Munnell et al. (2004) describe concerns such as the impoverishment of early retirees and the impact on other government programs that may pick up more recipients. Pre-entitlement retirement could result from the ending of a ‘career’ job through layoff or mandatory retirement, from health deterioration, or from preferences for a long period of leisure at the end of one’s life. Whatever the reason, finding a way to smooth consumption between the cessation of work and the beginning of social security payments is a necessity. This ‘bridge’ could come from an employment-related pension, the draw-down of accumulated savings, or from government programs other than social security such as unemployment insurance or welfare.

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<sup>1</sup> In this paper, I will use social security (without capitalization) to refer to retirement programs in general across countries. For the program in the United States, I will use capitalization—Social Security. For Canada, the social security programs are generally referred to as retirement income security or public pensions.

This paper addresses the question of how those stopping work before the age of benefit entitlement source their incomes and the extent to which they are able to avoid economic hardship. To do so, I study panels of Canadian men between 1993 and 2008 drawn from the Survey of Labour and Income Dynamics. This dataset is particularly well-suited to this question because of its high-quality income information, large sample sizes, and annual data availability. In addition, the structure of pensions in Canada—with a large role for employer-provided plans, tax-deferred and taxable savings—is comparable to the structure in the United States, giving the results wider import.

The work here builds on previous research. In the United States, a recent paper by Johnson and Mermin (2009) find that those with limited education and emerging health problems experience elevated levels of financial hardship in the years before Social Security entitlement. Johnson, Favreault, and Mommaerts (2009) explore the impact of disability at ages 51 to 64, and Duggan, Singleton, and Song (2007) show the impact of Social Security retirement age rules on Social Security Disability Insurance. Earlier work by Engelhardt and Gruber (2004) documented the income levels and poverty rates of those in and approaching retirement ages.

In Canada, Baker, Gruber and Milligan (2009) show the patterns of income receipt and consumption in the years leading up to and into retirement. In particular, a stark pattern of increasing income poverty at the ages before full benefit entitlement is observed—although without comparable increases in consumption poverty at those ages. Milligan (2008) documents the very large drop in elderly poverty since the 1970s, driven in large by increases in benefit

generosity to low income seniors. Baker and Milligan (2009) also provide a recent analysis of the composition of retirement incomes by source.

The contribution of this paper to the literature lies in the strength and depth of the data available. The data allow a very detailed composition of income by source using a high-quality income survey with annual information. These data are employed to make a novel calculation—determining the contribution of various supplemental income sources to lifting those not working at older ages out of a position of hardship. That is, I am able to address the importance and effectiveness of different income sources in raising the non-working elderly out of a position of poverty.

I have three major findings. First, demographic, health, and job characteristics are not as predictive as one might expect for determining who will be an early retiree. Second, those who retire early before the age of public pension entitlement are a very diverse group. Third, over half of the early retiring men I study who on first look seem to suffer hardship from low income turn out to be above the low income threshold when other resources are accounted for.

I begin below with a brief institutional description of the Canadian retirement income system, drawing lines between the Canadian and American systems. I then provide more detail about the data source and the construction of the dataset used in this analysis. The results follow, along with brief concluding thoughts.

## **2.0 The Canadian Retirement Income System**

Compared to the comprehensive public pension plans in most European countries, the retirement income system in Canada is much more comparable to that in the United States. In both Canada and the United States, a large public pension system provides core progressive benefits. These public pensions are then supplemented by many through employer-provided pensions and private savings (both taxable and tax-preferred). Pre-retirement public programs in both countries include unemployment insurance, disability insurance, and welfare. While the balance of this section points out how the Canadian system is different, it is important to acknowledge first these similarities.

The Canadian retirement income security system fits cleanly in the ‘three pillar’ approach described in World Bank (1994). There is a ‘poverty alleviation’ pillar consisting of demogrants which are conditioned on current income but not on lifetime earnings. Next, there is an earnings related pillar that provides core retirement income to those who have worked. Finally, the third pillar is made up of private savings and employment-related pensions. The contrast to the American system is strongest in the first and second pillars, as the Social Security program’s progressive benefit structure calculated on a base of lifetime earnings combines redistributive with earnings-replacement elements.

Over the time period of concern in this study (1993-2008) there was a reform to the Canada Pension Plan in 1998. This reform affected primarily the financing of benefits through sharp

increases in the payroll tax, but also some mild benefit reductions.<sup>2</sup> However, aside from this one exception, this period has seen a remarkably stable policy environment.

### *2.1 Old Age Security and related pensions*

The Old Age Security pensions consist of three parts—the regular Old Age Security pension, the Guaranteed Income Supplement, and the Allowance. These are all funded from general federal tax revenues, conditioned on age, and depend on current income but not previous earnings.

The regular Old Age Security pension pays a monthly, taxable, inflation indexed benefit to all Canadians age 65 and older. The monthly benefit is \$518.51.<sup>3</sup> There is a residency requirement of at least 10 years, and those with fewer than 40 years of residency receive reduced benefits. Also, those with incomes higher than \$66,733 are subject to a phase-out of the Old Age Security Pension at a rate of 15 cents per dollar of net income, which implies that benefits hit zero at a net income of \$108,152.

The Guaranteed Income Supplement is paid to Canadians age 65 and older based on an income test, using most sources of income (but excluding Old Age Security income). The full amount is \$654.47 per month for singles, and \$432.19 for each in a married couple. It is not taxable. The very first (and each subsequent) dollar of net income for the single or couple reduces the Supplement by 50 cents. This renders the Supplement to zero by incomes of \$15,720 for singles

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<sup>2</sup> See Pesando (2001) for a discussion of the 1998 reforms.

<sup>3</sup> All dollar figures in this section are taken from the July-September 2010 Income Security Program Rate Card (<http://www.servicecanada.gc.ca/eng/isp/statistics/rates/infocard.shtml>) and are expressed in Canadian dollars.

and \$20, 784 for couples. Since July, 2008, earned income of up to \$3,500 is exempt from the income-test.

The final part of the Old Age Security suite of benefits is the Allowance. This benefit is paid in one of two circumstances. First, if one spouse is age 65 or older and receiving Old Age Security and / or the Guaranteed Income Supplement, the other spouse can receive a benefit equal to the Old Age Security and Guaranteed Income Supplement benefits (\$950.70) from ages 60 to 64. Second, if someone is widowed and between the ages 60 to 64, a benefit of \$1053.83 is payable. The Allowance is also subject to income-tests at a rate of 50 to 75 cents per dollar of income. The Allowance is not taxable income.

The combined force of these demogrants yield quite redistributive results. Calculations of public pension replacement rates by Larochelle-Côté, Myles, and Picot (2008) yield values greater than 100 percent for those in the bottom quintile of earnings.

## *2.2 Canada Pension Plan*

The second tier of the Retirement Income System is the Canada Pension Plan.<sup>4</sup> This program is financed by an employee-employer payroll tax of 9.9 percent of payroll up to a cap that hits around the median earnings level. This cap is \$47,200 in 2010, which is less than half of the Social Security cap of \$106,800 for 2010 in the United States. The funds are kept out of the consolidated federal budget in a separate fund, which is currently running large surpluses. These

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<sup>4</sup> Quebec operates a separate but mostly equivalent plan called the Quebec Pension Plan.

surpluses are invested in a variety of financial instruments by the arms-length Canada Pension Plan Investment Board.

Retirement benefits can be taken at the regular retirement age of 65. The benefit is calculated as 25 percent of an indicator of lifetime earnings intensity, updated to current earnings levels.<sup>5</sup>

Importantly, only earnings up to the annual cap are considered in the formula, meaning that at best the Canada Pension Plan replaces approximately 25 percent of earnings up to around median earnings. This results in substantially lower earnings-related pension payments than under Social Security in the United States, which has replacement rates of 90, 32, and 15 percent for different ranges of income. The other important contrast is that the 25 replacement rate is flat across the board for everyone, rather than redistributive. The maximum benefit in 2010 is \$934.17 per month, and the average benefit is \$501.93.

Early retirement (and later retirement) is possible using an adjustment factor of 0.5 percent for each month earlier than or later than 65, up to 5 years. So, someone claiming benefits at the first possible date at age 60 would receive a  $0.5\% \times 60 = 30\%$  penalty off the full benefit.

Symmetrically, someone delaying until age 70 would receive a 30 percent bonus over the full benefit.

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<sup>5</sup> For each month, the ratio of earnings to the Years Maximum Pensionable Earnings (the aforementioned cap) is taken, and this ratio is capped at one. The bottom 15 percent of months—and any months with a child under age 7 for women—are discarded. All months from age 18 until the point of application are included. The average of these capped ratios for all included years is taken. For ages after 65, months are only included if they improve the average. This ratio is multiplied by the five-year average of the Years Maximum Pensionable Earnings to update for current earnings. This product is then multiplied by 25 percent and divided by 12 to arrive at the monthly benefit.

Survivor benefits are payable to surviving spouses, although limited by a spouse's own Canada Pension Plan entitlement. There is also a death benefit of \$2,500.

### *2.3 Private savings and pensions*

A variety of private savings vehicles are available to Canadians. Employer-provided pensions are common with larger employers and provide tax sheltered accumulation of benefits. These plans are referred to as Registered Pension Plans, and come in various defined benefit and defined contribution forms.

Savings through an individual or group Registered Retirement Savings Plan also attracts special tax treatment similar to Individual Retirement Accounts in the United States. Contribution 'room' is available depending on the amount of earned income, up to a maximum amount of \$22,000—but this amount is decreased for those with Registered Pension Plans through their employer. Unused room may be carried forward for use in future years.

Since 2008 Canadians can access tax-exempt savings through a Tax Free Savings Account, very similar to Roth Individual Retirement Accounts in the United States. There is no tax consequence for contributions or withdrawals, and income accrues tax exempt.

Finally, investment income outside these vehicles is taxed, with preferential rates for dividends and capital gains. Also, gains on primary residences are tax exempt.

#### *2.4 Other relevant public programs*

In addition to the retirement programs, it is important to lay out the other public income support programs that may be utilized by those younger than the age of public pension entitlement. A federal unemployment insurance program, called Employment Insurance covers those in paid employment. Disability insurance is provided through the Canada Pension Plan for those under age 65 unable to work because of disability. Finally, provincially-administered welfare programs, called Social Assistance, provide basic benefits to those under age 65 with no other income source.

#### *2.5 Summary of key ages*

Up to age 59, individuals have no access to any public retirement income benefits—with the small exception of those in receipt of a survivor pension from a deceased spouse who was collecting the Canada Pension Plan retirement pension. Those in this age range can, however, collect disability, unemployment, and welfare benefits. Starting at age 60 until age 64, Canada Pension Plan retirement pensions are available, as well as the Allowance benefit if one is married to someone over age 65 (or is widowed). The disability, unemployment, and welfare benefits are still available in this age range. Finally, at age 65 full Old Age Security and Guaranteed Income Supplement benefits are available to those who qualify, along with full Canada Pension Plan benefits.

### **3.0 Data sources**

The data employed in the analyses in this paper come from the Survey of Labour and Income Dynamics.<sup>6</sup> This survey has been conducted by Statistics Canada since 1993, and the most recent data available are from 2008. The survey takes the form of a panel covering 6 years, with around 17 thousand households included. A new panel has been started every 3 years, meaning that in any one year (after the initial 3 year startup) is covered by two different panels. The survey targets all individuals, except those in the northern territories, residents of institutions, and those living on Indian reserves. The design is a stratified cluster sample, but the provided weights allow adjustments for the survey design and systematic non-response.

A key advantage of the Survey of Labour and Income Dynamics is the methodology for gathering income information. All respondents are asked if they would like to have Statistics Canada pull in their income data from their tax filing records provided by the Canada Revenue Agency. Around 75 percent of respondents agree during their year in the survey, but this has typically risen to 90 percent by the last year in the panel. Around 95 percent of these individuals are successfully matched with the tax data. Those not permitting or achieving a match with tax data are given a full interview on the income questions, with a request by Statistics Canada to gather their income records to assist in the interview. The result is a set of income data that spans most of the information one might get from tax forms, and is not subject to the normal problems of recall that may affect other surveys.

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<sup>6</sup> Details on the methodology of the Survey of Labour and Income Dynamics can be found in Statistics Canada (2010).

In addition to the income data, the Survey of Labour and Income Dynamics has fairly complete information on labor market activities and experience, family structure, age, education levels, self-assessed health, and disability. There is also extensive information about the employer, if the person is employed.

Ideally, one would like to take a sample of prime age workers and follow them through their work lives through to retirement. With this Survey, however, both the panel length (6 years) and the number of years available (15 years) preclude this kind of analysis. Instead, I make use of the data both cross-sectionally and as a panel of up to 6 years. As the description of the results progresses, I will make clear how each part of the analysis uses the available data.

The main sample selection criteria I impose are sex and age. To clarify and simplify the analysis, I focus on men. The analysis of women is of course important and interesting, but with lower average labor market attachment the definition and study of retirement is less straightforward. For age, most of the analysis is conducted on samples using ages 55 to 67. The upper limit is chosen to allow some information on the evolution of incomes after the age of full entitlement at age 65, but keeps focus on the pre-65 period. Attrition through death also limits the sample size at older ages.

I will address most issues of definition and measurement as they arise in the discussion of results. However, an overarching issue common to all of the results is the definition of retirement to use. There are many potential empirical definitions one could consider, but the focus of the

present paper pushes me clearly toward one definition.<sup>7</sup> I am interested here in the potential hardship faced by those before hitting the key ages of public pension entitlement, ages 60 and 65. In this case, therefore, using ‘not working’ as a definition of retirement seems natural. The particular reason and the permanence of the state of non-work is less interesting; what matters for the purpose of this paper is that the person is not gaining income from employment.

## **4.0 Results**

I now turn to the analysis of the data. The analysis begins with an exploration of the extent of early retirement and non-work among those before full entitlement age. In addition to graphs of retirement rates, I present regressions explaining the importance of job, personal, and health characteristics to non-work and retirement. I then proceed to several graphs looking in detail at the patterns of income receipt among the whole population, as well as among those who are not working. The results section closes with an analysis of whether and how those in potential hardship are able to pull themselves out of their low-income situation. In the results below, I employ the term ‘retirement’ generally, encompassing the different definitions I use. When I apply a more rigid definition I will make that clear.

### *4.1 The extent of early retirement*

The first set of graphs looks at transitions into retirement. I exploit the panel nature of the study by comparing those who are working in one period to those who are not in the next. Specifically, I take the entire sample of men aged 45 to 80 and keep only those who are not retired, using

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<sup>7</sup> See Denton and Spencer (2009) and Borland (2005) for an extensive discussion, framework, and literature review on defining retirement.

three different definitions of retirement. I then record the proportion of these men who have changed state into retirement in the next year observed. Here, and in all of the analysis, sample weights are used.

The three definitions of retirement explored here attempt to capture different concepts of retirement and different strengths of a particular concept. I first consider self-assessed retirement. The advantage of this definition is that the respondent has at his disposal good information about his expectations, his preferences, and other aspects of his situation. In this way, he is better informed than the analyst trying to infer his state from the observable data. On the other hand, the response is subjective and the threshold one person uses to self-define as retired may be different than another's—and these differences may vary systematically across the population.

The other two definitions of retirement that I use embody the idea of not working. As a sharp definition, I impose zero labor market earnings as the definition. Labor market earnings here include both employment and self-employment earnings. Along the same vein, but weaker, I also try imposing labor market earnings being no longer the 'major source' of income.<sup>8</sup>

The results are presented in Figure 1. In common, all three definitions show gently rising rates of retirement until age 65, when retirement spikes for all three. After age 65, there is divergence in the trend and level of each of the measures. Of those working at age 64, the Figure shows that between 30 and 50 percent of workers retire the next year.

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<sup>8</sup> The 'major source' is determined by finding the category of income that is the highest. The categories used are employment earnings, non-labor private income, and government transfers.

Across all ages until 65, the major source definition leads to the highest reported retirement rates. The higher retirement rates reflect the fact that someone might still be working part-time or part of the year but still be considered retired under this definition. Self-assessed retirement and the zero earnings definition look fairly similar between ages 55 to 64, which is the primary age-range focused on in this paper. After age 65, self-assessed retirement exceeds the zero earnings definition by a wide margin, reflecting the fact that many people who consider themselves retired may still have some labor market earnings, from, for example, a part time job. But, again, since the focus is age 55-64 in this paper the divergences of the definitions after age 65 are less troubling.

This graph pools together all years from 1993 to 2008. In analysis not shown here, I have analyzed the time periods up to and after 2000 separately. The results are very similar in both of these subsamples, so I have continued with the complete pooled sample.

To dig deeper into this result, I formed a five-year retirement rate for each of the three definitions. That is, I conditioned the sample on being currently not retired and being able to observe that same person five years' hence. I did this separately for each of the three definitions.

The results are in Figure 2. Each data point represents the proportion of men retired five years later given they are working at the current age. For example, the major source is not earnings measure of retirement for age 51 reveals that 6.9 percent of those not retired age 51 are retired by this definition by age 56.

The extent of retirement under any of the definitions is between 7 and 20 percent over the years up to age 59. At that point, there is a big spike starting at age 59 and continuing to age 60. At age 60, the retirements at age 65 will be included in the measure, which may explain the spike at that age under all three measures.

This figure suggests that non-work by those in their 50s is quite small, averaging around 7 percent over a 5 year period. However, in the 60s this jumps up significantly to the 25 to 35 point range. So, retirement in the first half of the 60s may prove to be a more pervasive phenomenon than retirement before age 60, at least under these definitions.

#### *4.2 Who retires early?*

Having seen the prevalence of non-work at older ages, I next turn to a regression analysis that attempts to explain which men are not working. Previous work such as Johnson, Mermin, and Murphy (2007) finds an important role for health and disability changes, while Johnson and Mermin (2009) relate earlier labor force exit to lower education levels.

In the analysis below, I select two samples of those still working—one sample is for those working at age 54 and the other is those working at age 59. I then study retirement over the next five years as a function of their age and demographics, workplace characteristics, and health. That is, the younger sample studies retirement at ages 55-59 and the older sample at ages 60-64.

The workplace characteristics and health are measured at entry into the panel (at age 54 or 59, depending on the sample.) Include all available observations for each individual that appears both at the entry point (ages 54 and 59) and also in at least one of the four years following. That is, if I see someone at ages 54 and 55, I include that age 55 observation in the sample. However, if I see him only at age 54 and not later, he cannot be included in the sample because there are no observations in the age 55-59 age range of interest. This means that some men are in the sample 1 time and others up to five times (separate observations for ages 55 through 59). All years are pooled together in the sample. Because I need to observe pre-panel characteristics, no observations from the first year (1993) make it into the sample.

The dependent variables used here are two of the ones explored above—self-assessed retirement and zero earnings. These are both coded as binary variables, so the regression is implemented as a linear probability model using ordinary least squares. The standard errors are corrected for clusters on each individual and also for heteroskedasticity using the robust Huber-White correction.

The first set of results in Table 1 shows the regression coefficients for the age 55-59 sample. The four columns show the results for separate regressions. The first two columns use the zero-earnings dependent variable and the next two columns use the self-assessed dependent variable. The two specifications for each dependent variable show the difference made by the addition of the health variables. For each specification, the mean of the dependent variable, the number of observations, and the r-squared is reported at the top of the column. All of the demographic, workplace, and health variables are recorded at the year before entry into the panel—at age 54.

Only those with employment income at age 54 (and a main job from which to record workplace characteristics) are included in the sample. The full set of variables included in the regression is listed in the notes to the table.

The first column of Table 1 has the results for the zero-earnings dependent variable using the specification without the health variables. The r-squared here is relatively low for a labor market regression, at 0.103. This suggests that early retirement—at least by this definition—is not terribly well explained by observable characteristics. The age dummy variables have considerable explanatory power. There is an increasing probability of non-work from ages 56 to 59. At age 59, all else equal, a man in this sample is 9.5 percentage points more likely to retire than a man at age 55 (the excluded category). These effects are large relative to the mean of the dependent variable (0.061) and are statistically significant. These strong age effects suggest that rather than workplace characteristics, unobserved personal preferences and characteristics correlated with aging play a very important role in these early retirements.

The next rows show the impact of being an immigrant, being married, and of education. Perhaps surprisingly, none of these factors has an impact. Lower educated men are no more likely than higher educated men to retire in this age 55-59 age range using this zero earnings definition. Also included but not reported in the table are a set of province dummies and a set of year dummies.

We now turn to workplace characteristics. The first variable is the number of years of full-time full year experience. Those with more lifetime employment should have a better chance to

accumulate savings, either on their own or through an employer-sponsored plan. However, there is almost no perceptible impact of working more years on retirement in this age 55-59 age range.

The next variable measures the presence of a workplace pension. This variable is set to one if the man was covered by a workplace pension plan or group Registered Retirement Savings Plan at his main job at age 54. Those with workplace pension coverage are *less* likely to have zero earnings in ages 55-59 than others in the sample, with a coefficient of -0.025. This may be related to the definition of retirement used here—those with a workplace pension may be less likely than others to suffer a spell of unemployment that leads to zero earnings at these ages. Or, this could be evidence of a ‘golden handcuff’ effect that keeps workers at these ages in the job because of pension benefit accrual rules that penalize retirement at certain ages. Whatever the underlying cause of this effect, the negative coefficient clearly indicates that employer pension coverage does not increase non-work for men in this age range.

Being a worker covered by a collective agreement or being a union member does little to explain retirement at these ages using the zero earnings definition. This variable is correlated with having a workplace pension, but on its own has no direct influence on retirements.

Fulltime work (defined as 30 usual hours or more at the main job as of age 54) has a large impact on work at ages 55-59. Those working fulltime rather than part time are much more likely to still show earnings over the next five years, with a coefficient of -0.148.

The coefficient for public sector workers is negative and fairly large at -0.045, but not statistically significant. Public sector workers are much more likely to be covered by a pension and be covered by a collective agreement, but once accounting for those factors being in the public sector doesn't have a significant influence on its own.

The next three rows show the results for the spouses of the men in the sample. If there is no spouse, each of these variables is set to zero. Of these three, only spouse employment (measured when the man is age 54) is significant with a coefficient of -0.032. While those with a spouse working may have higher lifetime household income which could make an early retirement affordable, the desire for joint retirement may keep these men in the labor force at this age.<sup>9</sup>

In addition to those shown here, we include a full set of occupational dummies, industry dummies, and firm-size dummies. Perhaps surprisingly, the sets of occupation and industry dummy variables do not pass *F*-tests for joint significance. For the 10 occupation categories, the test statistic is 1.52 (yielding a *p*-value of 0.135). For industries, the 16 categories give a test statistic of 1.16, with a corresponding *p*-value of 0.296. The number of employees category dummies are, however, jointly significant. With the strongest difference being between very small (fewer than 20 employees) employers and all others.

This first set of regression results yield two clear conclusions about retirement (as measured by zero-earnings) at ages 55-59 for men. First, unobservable factors seem to dominate the decision.

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<sup>9</sup> See Schirle (2008), Coile (2004), and Johnson and Favreault (2001) for more on joint retirement decisions by couples.

The R-squared is low and the strongest impact is for unobservable characteristics particular to aging (as measured by the age dummies). Few of the other variables show strong effects. The second conclusion is that strong attachment to the labor force at age 54 (as evidenced by having a full time job or having a workplace pension) leads to a lower incidence of zero-earnings over this age range.

The second column uses the same dependent variable, but now includes three measures of health. The self-assessed health variable is only available from 1996, which effectively drops three years from the sample resulting in a smaller sample size. The self-assessed health variable is coded here as a binary variable indicating the response was that health was either fair or poor. Separate self-assessed health variables for the man and his spouse (if he has a spouse) are included. The other health variable is an indicator for having a work-limiting disability. Both the self-assessed health and the work limitation variables are measured at age 54 in order to avoid any endogenous impact of non-work on health. While this does limit the ability of the analysis to explore the impact of a health shock, this specification does shed light on whether those who have pre-existing health or disability problems are those more likely to exit the labor market at ages 55-59.

Most of the coefficients in the second column are very similar to the first column. Including health variables has little impact on the other demographic, workplace, and spouse coefficients. Moreover, the three health variables on their own do not show strong or significant effects.

The right-hand side of Table 1 uses the same age selection criteria as the left-hand side—work at age 54 and appearance in the sample at least once between ages 55 to 59. The sample sizes are

slightly lower because of some non-response to the major activity variable that is used to categorize self-assessed retirement.

The mean of this dependent variable is higher than the zero-earnings definition, reflecting the fact that many people who may self-assess as retired still may have some labor market earnings. On the other hand, some of those with no earnings may still be looking for work and may not self-assess as retired. The R-squared for the first specification is also higher, at 0.129 compared to 0.103 for the zero earnings definition.

The set of age dummies shows even larger coefficients than with the zero-earnings definition—around double the magnitude. This suggests a very strong gradient of self-assessed retirement with respect to age. This may reflect a cultural notion of retirement—those not working at age 55 may not self-assess as retired while those at age 59 with the exact same profile may self-assess as retired simply because of how they understand the meaning of the word.

Several of the demographic and workplace variables show very different coefficients under this retirement definition. However, the education variables remain statistically insignificant both individually and jointly as a group.

Immigrants are much less likely to self-assess as retired in the age range 55 to 59. The coefficient of -0.41 is 43 percent of the dependent variable mean of 0.096. This may reflect lower lifetime earnings and savings generating a need to keep working—yet in the previous results using the zero-earnings definition I found that immigrants were no more likely than native-born Canadians

to stop earning. Another hypothesis consistent with this evidence is that immigrants have a different concept of retirement and are less likely than a native-born Canadian to use this concept to describe the same state.

Those covered by a workplace pension, union, or collective agreement at age 54 are much more likely to report being retired at ages 55 to 59. The coefficients are strongly significant. The difference in these results compared to the zero-earnings results may reflect transitions from ‘career’ jobs into part-time employment where they consider themselves ‘retired’ but still have positive earnings.

Fulltime work at age 54 and having a working spouse are negative predictors of retirement, although the coefficients have changed slightly from the zero-earnings definition.

The inclusion of the health variables in the last column in Table 1 changes few of the other coefficients—although being married is now a significantly positive predictor of retirement. The measures of own health show no statistically significant effect, but the indicator for having a spouse with fair or poor health has a coefficient of -0.051. This suggests that men with a spouse in poor health when the man is age 54 are less likely to retire over the next five years. This may indicate that the need for household income dominates the need of the man to take time out of the labor market to care for his ailing spouse.

The analysis with the self-assessed retirement dependent variable reveals both the danger and the allure of this measure of retirement. It may be valuable because of its ability to distinguish

between later life unemployment spells and more permanent notions of retirement. However, the heterogeneity in the subjective notion of being ‘retired’ contributes confusion to the interpretation of these results. A clear conclusion from this analysis is that the definition of retirement used can change not only the magnitude but also the sign of the coefficients of important covariates.

Table 2 repeats the analysis of Table 1, but with the age range 60 to 64. Also, instead of conditioning on work at age 54 and recording job characteristics from that age, I use age 59. Otherwise, the specification and layout of the table is the same. Below I limit the discussion to important differences between the results in Tables 1 and 2.

There are two differences to consider with this age range. First, people are older and health, longevity, and savings adequacy considerations should change as one ages. Second, entitlements to public programs are very different. Starting at age 60, early retirement through the Canada Pension Plan is available. Also, the number of years until full Old Age Security and Guaranteed Income Supplement entitlement at age 65 is now smaller—meaning that there are fewer years to wait until those pensions begin paying if one retires at, say, age 63 compared to age 56.

The age effects here in Table 2 are much larger in all four columns, and the gradient between ages is also large. This corresponds well with the raw retirement rates observed in Figure 1—the slope of the proportion retired is at its steepest in the age 60-64 age range. (Setting aside, of course, the large spike right at age 65.)

Being married is now a strong positive predictor of retirement in all specifications, suggesting a preference for leisure in the company of others or a wealth effect generated by higher lifetime earnings. There are some positive coefficients for education which are insignificant in the zero-earnings dependent variable regressions, but gain magnitude and significance in the self-assessed columns on the right of Table 2. As before, these strong effects may capture differing attitudes and conceptions about retirement as much as they might indicate actual behavioral differences.

The indicators for a workplace pension and unionization or a collective agreement show much larger coefficients in the age 60 to 64 age range than was the case for age 55 to 59 in Table 1. Spousal employment, however, becomes an insignificant predictor of retirement.

The self-assessed health variables exhibit no statistical significance. Having a work limitation at age 59 does have some predictive power on having zero earnings in the age 60 to 64 age range, suggesting that men may be more willing to stop work in response to a work limitation when they are closer to full benefit entitlement than they are at earlier ages.

Overall, the analysis of age 60 to 64 shows broadly similar patterns to that of ages 55 to 59. The differences that do appear may reflect the shorter waiting time between retirement and full benefit entitlement when retiring at these later ages.

#### *4.3 Income patterns of the near-elderly*

The regression analysis attempted to draw a picture of who retires early, using different definitions. I now proceed to examine the incomes of those in the age range 55 to 67 in order to

see the impact of these retirement decisions on the incomes received, with the ultimate target being the study of those with lower incomes. In this section I report on the age-pattern of income levels, shares of different components, and the probability of receipt of these components. I no longer condition on work at earlier ages so that I can observe the whole age 55 to 67 age range. Thus, the analysis is no longer longitudinal.

All of the analysis here is on individual rather than family income. This is a deliberate choice since the target of policy concern is individuals who retire early; before full benefit entitlement ages. The point of this exercise is to document the income patterns and consequences of the retirement decisions made by these individuals. In the next section, the influence of having other family members with income on the hardship faced by these individuals will be explored.

I begin by decomposing total income into three components, being labor market earnings, non-labor market income, and government transfers. Labor market earnings consist of both paid employment and self-employment. Non-labor market income comes from private pension plans (that is, employer-provided rather than public pensions), investment income, and other income. Government transfers are made up of income from the Canada Pension Plan, Old Age Security / Guaranteed Income Supplement / Allowance, Employment Insurance, Social Assistance, and other government transfers. All dollar values are adjusted for consumer price inflation to 2008 values. Individuals with negative total income are removed in order to facilitate the calculation of income shares.<sup>10</sup>

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<sup>10</sup> Negative income can arise from negative self-employment earnings or negative investment income.

Figure 3 starts the analysis by showing different percentiles and the mean of total income across all the ages from 55 to 67. There is a very strong compression of the distribution of income over this age range. The 90<sup>th</sup> percentile of income falls from over \$104 thousand at age 55 to just under \$43 thousand at age 67. As will be shown below, this largely reflects the diminishment of employment earnings and its replacement with retirement income of lesser amounts. On the other end, the 10<sup>th</sup> percentile rises from about \$9,500 to \$12,500. This increase reflects primarily the generosity of the 1<sup>st</sup> pillar of the Canadian retirement income system, with strong redistributive transfers to low retirement income recipients after age 65 through the Old Age Security and Guaranteed Income Supplement pensions.

The importance of the composition of income to the levels of income is made clear in Figure 4. Here, with the same sample as Figure 3, I graph the decomposition of total income into its three constituent components, non-labor private income, government transfers, and labor market earnings. This decomposition is done at the individual level, so the numbers shown are the mean individual component shares rather than the aggregate component shares. Labor market earnings move from being the dominant source of income at age 55 to almost zero by age 67. The contribution of non-labor private income is very revealing in this graph. From 10.7 percent at age 55, the share almost doubles to 20.6 percent by age 64, before collapsing back to 10.8 percent by age 67. This may indicate that individuals rely heavily on private income sources to replace labor market earnings when they exit the labor market before the age of full pension entitlement at age 65. This hypothesis will be explored in greater depth below.

Figure 5 repeats the same analysis as Figure 3, but with a different sample. The sample here includes only those with zero labor market earnings; those completely out of the labor market. This allows insight into the income levels and distribution for those who are not working. To note, the composition of the sample changes dramatically across ages, with only 16 percent of the total sample appearing at age 55 but 72 percent by age 67. This is appropriate since the object of interest here is the nature of incomes among those who are not working—but it is important to emphasize that this is a changing mix of people across ages.

Income at the 90<sup>th</sup> percentile in Figure 5 suffers no dramatic drop as was seen in Figure 3. This is because the Figure 3 drop was caused by the transition from employment earnings to retirement income while here in Figure 5 all individuals are surviving on their private non-labor income and government-provided incomes. As well, there may be a compositional effect here if the extra retirees added as age progresses are lower income and pull down the 90<sup>th</sup> percentile cutoff. The 75<sup>th</sup> percentile of income hovers around the \$15,000 to \$20,000 level. This reflects a fairly substantial amount of non-labor income for a sizeable minority of the non-earners. That is, the graph indicates that nearly half of those with no labor market income are reporting non-labor private income of at least \$1,000 a month.

At the bottom end of the income distribution, the story is different. Income levels are very low before age 65, with the 10<sup>th</sup> percentile under \$1000 per year until age 61. However, there is a very dramatic rise in incomes from that point forward. The jumps at age 60/61 and especially age 65 indicate that this is likely driven by entitlement to public pension income flows. That is,

reaching the age of public pension entitlement has a dramatic and large impact on the individual incomes of those at the bottom of the income distribution.

The next two figures look at specific sources of income for this population of zero-earners.

Figure 6 looks at the proportion receiving a positive amount of different sources of government income at each age. The top line in Figure 6 shows the proportion of zero earners with any amount of government transfer income. From around 65 percent before age 60, this proportion jumps over 90 percent at age 60 as eligibility for the Canada Pension Plan early retirement option becomes available. The proportion reaches nearly 100 percent at the age of full benefit entitlement at 65.

The sources of this government transfer income are diverse. Among those with no earnings before age 60, around 20 percent receive some Canada Pension Plan income. The Canada Pension Plan income observed before age 60 can come from one of two sources. First, it can be a survivor pension paid out to a man surviving his deceased wife. However, this is rare, especially at these ages. The vast majority of this Canada Pension Plan income comes from the disability insurance component of the program. This proportion jumps significantly at age 60 and continues growing as entitlement to retirement pensions becomes possible.

Social assistance income is also received by a significant minority of non-earners. Starting at just over 20 percent at age 55, the proportion receiving Social Assistance drops steadily with age—although this is more likely a composition effect than fewer individuals on Social Assistance.

Men under age 60 are not eligible for any of the Old Age Security benefits. Starting at age 60, those who are widowed or married to an Old Age Security recipient over the age of 65 can receive the Allowance. The line in Figure 6 indicates this is a very small proportion of men. Then, at age 65, eligibility for Guaranteed Income Supplement and the Old Age Security pension arises. Here, the probability of receipt jumps to 97 percent. Those not receiving any of these benefits after age 65 may be more recent immigrants or they may be high income men who are above the thresholds for complete phaseout of these benefits.

Finally, among zero earners, Employment Insurance plays a relatively small role. This is because eligibility for Employment Insurance depends on attaining a certain threshold of hours worked over the 12 month period before application. Those with zero earnings may indeed be long-run unemployed, but they may be ineligible for benefits or have exhausted benefits to which they were previously entitled.

The last line to note on Figure 6 is the proportion under the Low Income Cut Off. This is a measure of low income that is similar to the poverty line used in the United States.<sup>11</sup> The income used to measure low income here is at the level of the economic family, so this line indicates the proportion of men who reside in low income families, rather than those who have low incomes themselves necessarily. This proportion falls from over 30 percent in the 50s to 5.9 percent by age 67, with the largest drop occurring at the age of full benefit entitlement at age 65.

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<sup>11</sup> See Giles (2004) for a description of the methodology. The Low Income Cut Off is a head count measure. Economic Family income is compared to the Low Income Cutoff corresponding to that family. If it is under the cutoff, the family is considered to be low income.

Figure 7 takes the non-earners through a similar exercise for sources of non-labor private income. The proportion of individuals with some non-labour private income is over 50 percent at age 55 and rises steadily after that. The sources are diverse. Pension income from employer-sponsored pensions rises from 24.4 percent of non-earners at age 55 to 65 percent by age 67. Investment income rises more gently, and other income is fairly stable.

In summary, this analysis of the levels and sources of incomes of those approaching the ages of public pension entitlement reveal several important facts. First, a substantial minority of early retirees has access to fairly large amounts of private income, typically from employer-provided pensions. Second, among those without large pension income sources, many receive income from sources such as disability insurance, welfare, and unemployment insurance. Finally, a noticeable minority of men exit the labour market before the ages of public pension entitlement with almost no income at all. This evidence can best be summarized as a very heterogeneous population.

#### *4.4 Avoiding hardship before pension entitlement*

The analysis above has revealed that there are many early-retirees who seem to survive on very little income. In Figure 5, the 25<sup>th</sup> percentile of annual income among non-earners at age 58 is only \$2,248. Before moving to a conclusion that there is substantial hardship among this population, it is necessary to consider this evidence carefully. Indeed, while Milligan (2008) and Baker, Gruber and Milligan (2009) do find evidence of income deprivation before age 65 among older Canadians, there is not corresponding evidence of consumption deprivation.

How can this be reconciled? One possibility is that the income-deprived individuals are smoothing their consumption by drawing down assets. For example, drawing down taxable assets is not counted as income but can sustain consumption. Similarly, withdrawals from Registered Retirement Savings Plans are not included in the definition of total income in the Survey of Labour and Income Dynamics but can clearly sustain consumption. Besides these more liquid assets, home equity loans or proceeds from the sale of a home would provide funds as well. Finally, assistance from friends or family through direct contributions of time, money, or goods could help to sustain consumption. In sum, the income shortfalls observed in the analysis thus far may not be good indications of low economic welfare in the presence of these other sources of funds for consumption.

In this final section of results, I open this question by examining some potential ways in which a low income non-earning older male could sustain his consumption. I examine two sources of funds for consumption. First is income from a spouse or other family member. Second is withdrawals from Registered Retirement Savings Plans.

I select a sample of males between ages 55 and 64 who have no earnings. These are the objects of potential policy concern. Among these, I select those individuals with low income. For this exercise, I define low income as having *own* income lower than the *family* low income cutoff. That is, the fictive experiment here is to imagine how many men would face hardship given their family obligations if they had to rely only on their own incomes to support themselves and their families. The answer to this question can help to address how concerned one should be about the

relatively high proportion of individuals with very low incomes that have been revealed in the earlier analysis.

Of the 49,023 males in the overall sample between the ages of 55 and 64, of these, 14,037 have no earnings, or 28.5 percent. Among the no-earners, 11,047 fall below their family's Low Income Cut Off, considering only their own income. This is 78.6 percent of those with no earnings, but only 22.5 percent of the whole population.

I take this sample and to the man's own income I then add, one at a time, different sources of income. These sources are income from the spouse, from other (non-spouse) family members, own Registered Retirement Savings Plan withdrawals, and other family Registered Retirement Savings Plan withdrawals. I then also total all of these sources and do a final total calculation.

The results of this analysis appear in Table 3. The table reports the proportion of at-risk men who have a positive amount for each supplemental income source. It also reports the mean and median if positive. Finally, the last column adds this income to the man's own income to see what proportion of the men is lifted above their relevant Low Income Cut Off lines.

For spouse income, 63.1 percent of at-risk men have a spouse with income. Among these, the mean income is \$22,070 and the median is \$14,429. When this income is added to the man's own income, it lifts 37.7 percent of them above the Low Income Cut Off line. In other words, spouse's income alone moves over one third of men who might appear to be at-risk back into a more comfortable income range.

Other non-spouse family income is also large. This may be from children still living at the parents' home, or from a situation where the parents are living with their married children. Either way, the living circumstance of the man benefits potentially from this extra income. Again, the income amounts are quite large and sufficient to lift 25.2 percent of men over the Low Income Cut Off. When combined with spousal income, total family income lifts 52.3 percent of men out of being at-risk.

The next set of results studies Registered Retirement Savings Plan withdrawals. 10.2 percent of these at-risk men make withdrawals, and 15.1 percent of families. The mean amount is \$11,040 but the median is lower at \$7,498. Registered Retirement Savings Plan withdrawals in total lift 11.6 percent of men over the family Low Income Cut Off line.

The final row combines these income sources. The proportion of at-risk men with at least some of this supplemental income is 74.6 percent. The median amount if positive is \$35,741 and the mean is \$23,641. All combined, this is sufficient to lift 54.8 percent over the family Low Income Cut Off line. This is, of the 11,047 men identified as at-risk, 4,993 of them remain below the Low Income Cut Off once other family income and Registered Retirement Savings Plan is accounted for.

As noted at the beginning of this section, other sources of consumption—selling financial or housing assets, gifts from friends or family—could lift more of these men out of perilously low levels of income.

The analysis in this section has demonstrated that a majority of men who look as though they may suffer from very low incomes when looking only at their own income sources actually do much better when other alternative sources of funds are considered. However, this majority is slim, leaving a large minority of men who may suffer at ages leading up to full public pension entitlement. This analysis thus underscores the conclusion in the previous section: the population of early retirees is highly heterogeneous.

## **5.0 Conclusion**

Many countries are moving to later entitlement dates for their social security programs. This has raised concerns about the ability of individuals and families who retire before the age of benefit entitlement to make it to the receipt of their first benefits without suffering financial hardship. In this paper I use high-quality Canadian income data to analyze early retirement. There are several important findings. First, I find that job, demographic, and health characteristics are not strongly predictive of who retires early and that results can vary strongly across different definitions of retirement. Second, the set of pre-entitlement retirees is a very diverse group, encompassing both those with large sources of income on which to draw and also those with almost no observable income. Finally, around half of those whose own incomes have fallen perilously low following a pre-entitlement labor market withdrawal are not actually in as much trouble as it may first appear, as the income of other family members and the draw-down of savings allows for sufficient family resources. However, the other half of early retirees does appear to suffer from low income before hitting age 65.

This work will continue in the future in two ways. First, I will continue to work on the Canadian case by bringing in repeated cross sections of consumption data to study the early pre-entitlement retirees. Second, I will take this set of questions and methodology to study retirement incomes in the United States using the Health and Retirement Study.

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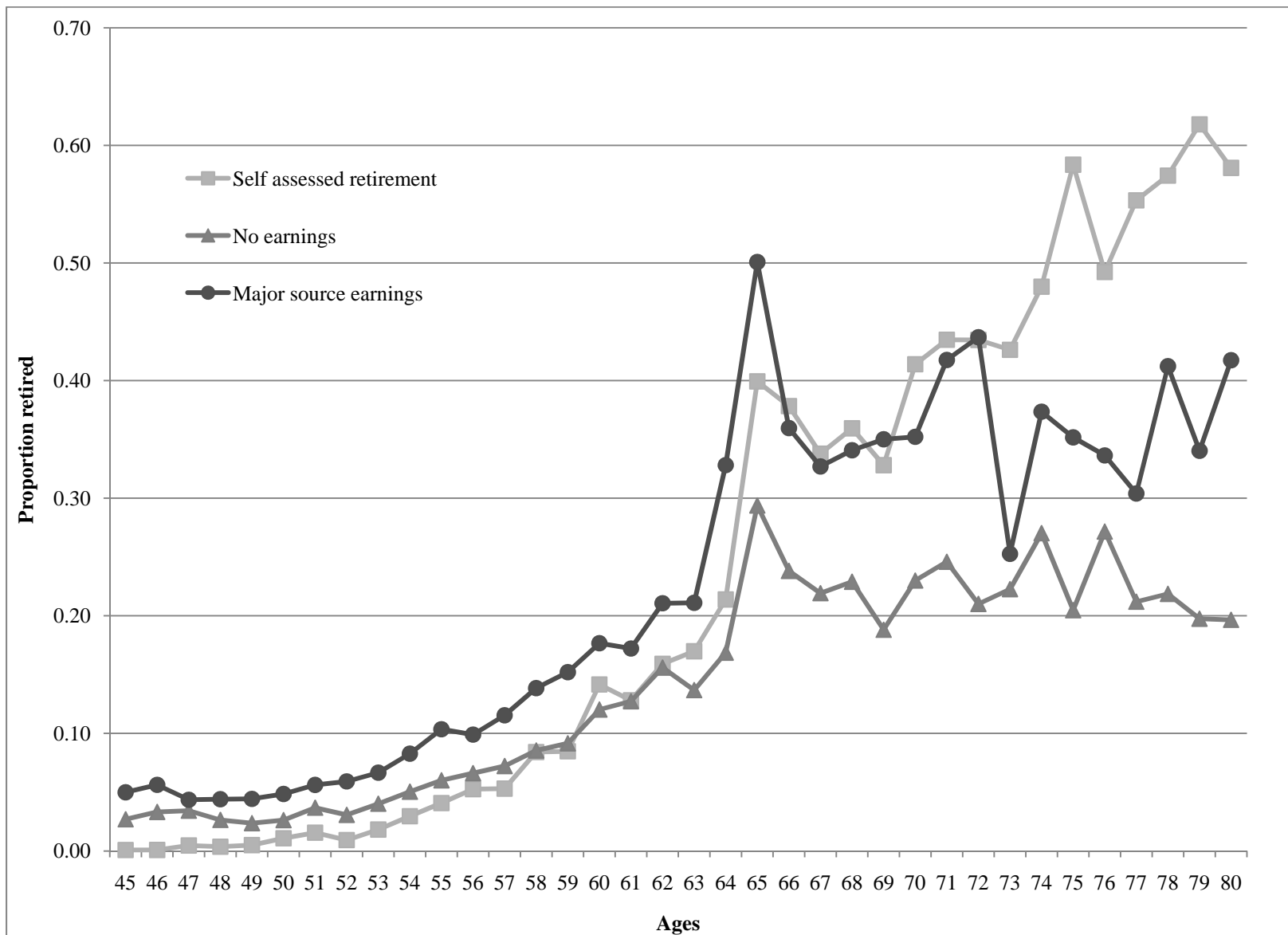
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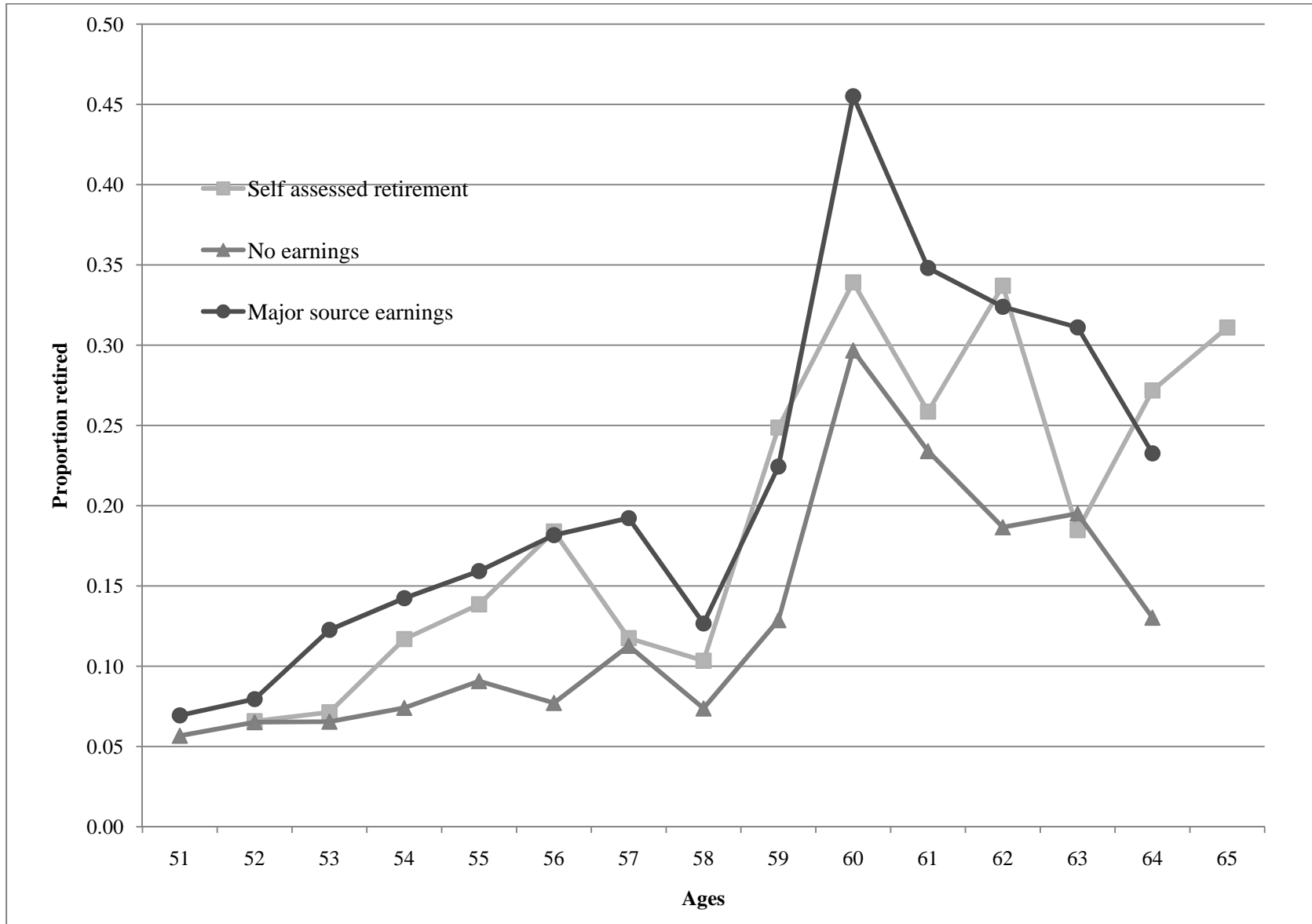
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**Figure 1: Retirement rates under different definitions**



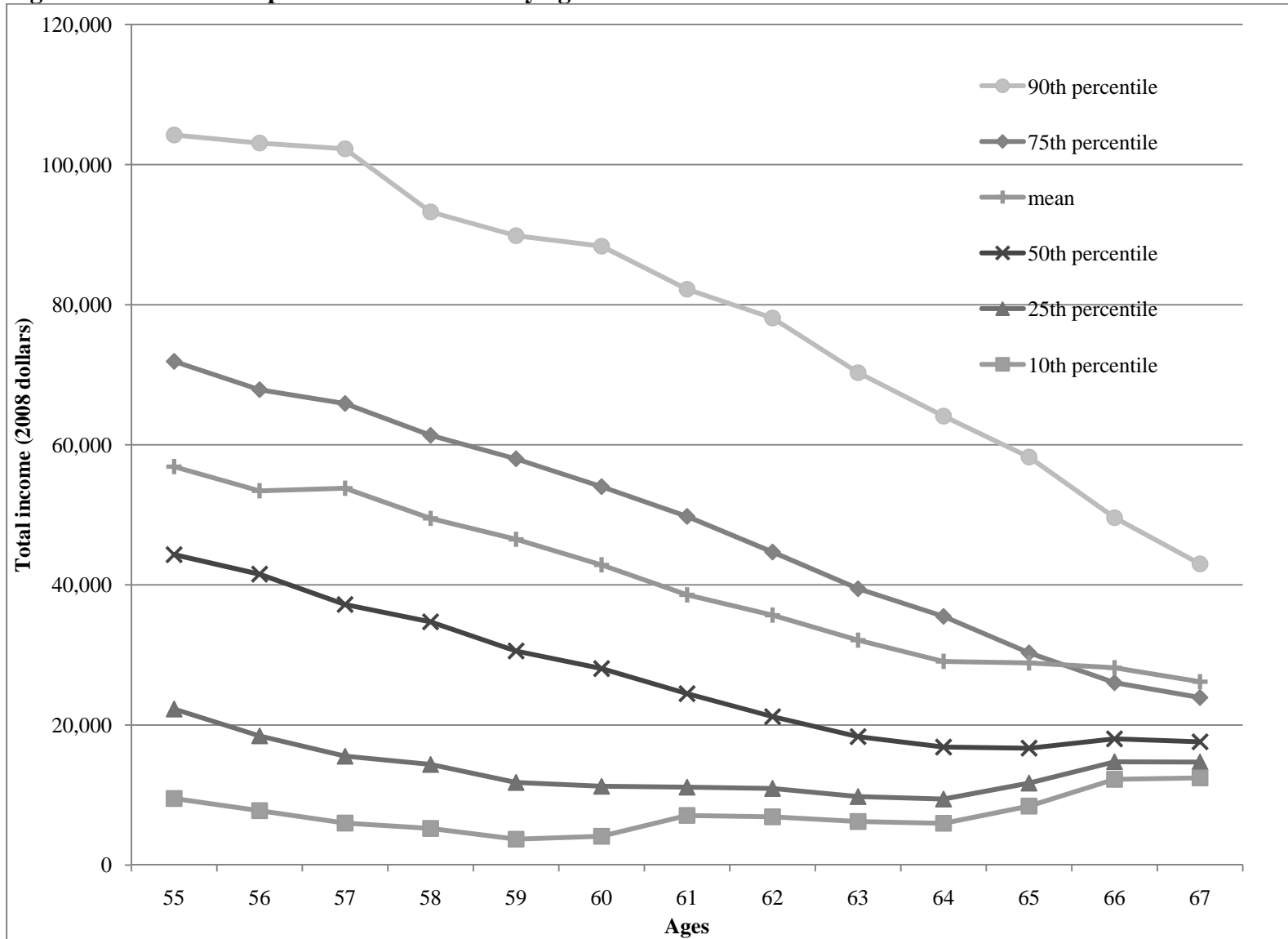
Source: Author's calculations using the Survey of Labor and income Dynamics, 1993-2008

**Figure 2: Five-year retirement rates under different definitions**



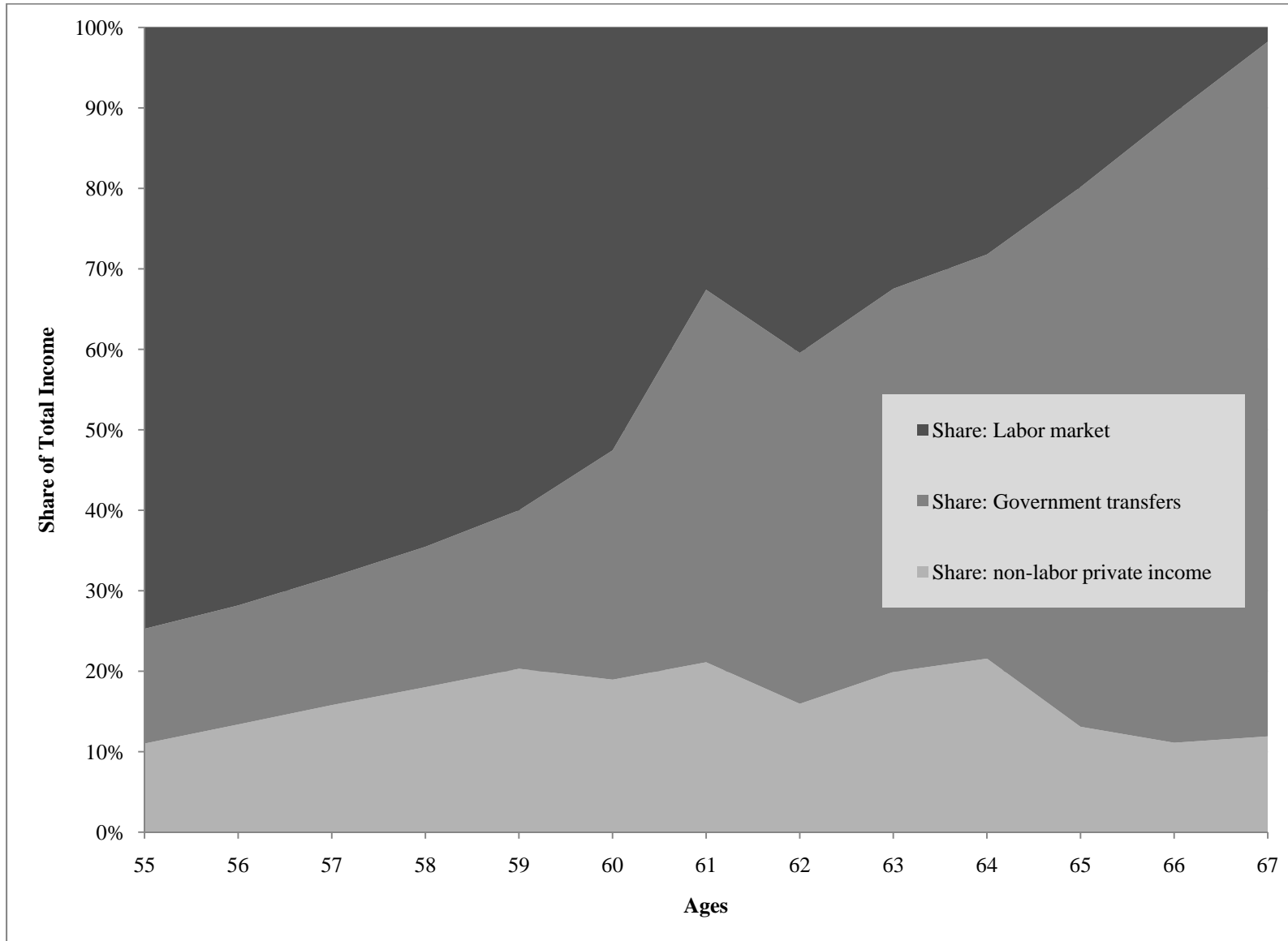
Source: Author's calculations using the Survey of Labor and income Dynamics, 1993-2008

**Figure 3: Total income percentiles and mean by age**



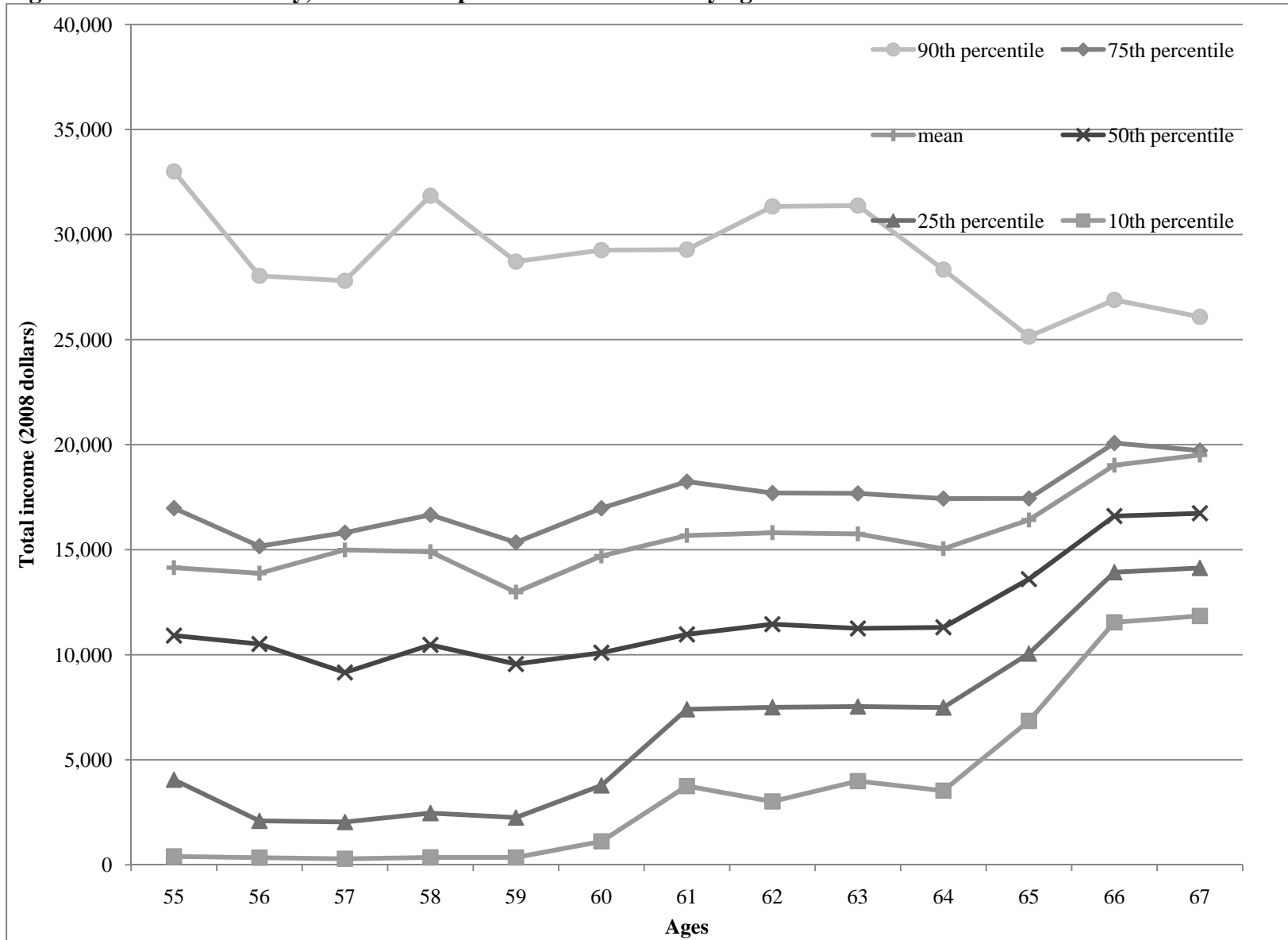
Source: Author's calculations using the Survey of Labor and income Dynamics, 1993-2008

**Figure 4: Income component shares and mean by age**



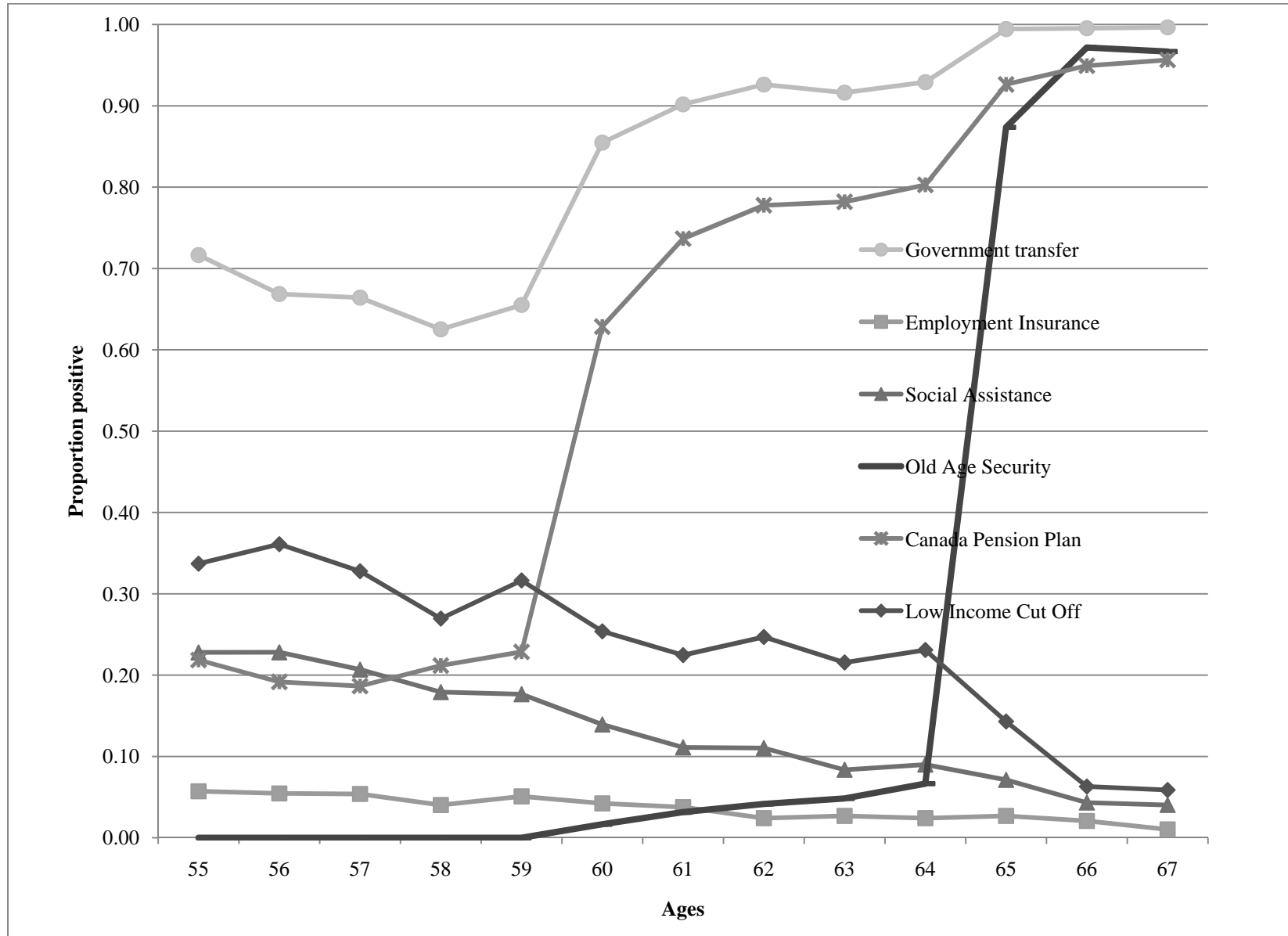
Source: Author's calculations using the Survey of Labor and income Dynamics, 1993-2008

**Figure 5: Zero earners only, total income percentiles and mean by age**



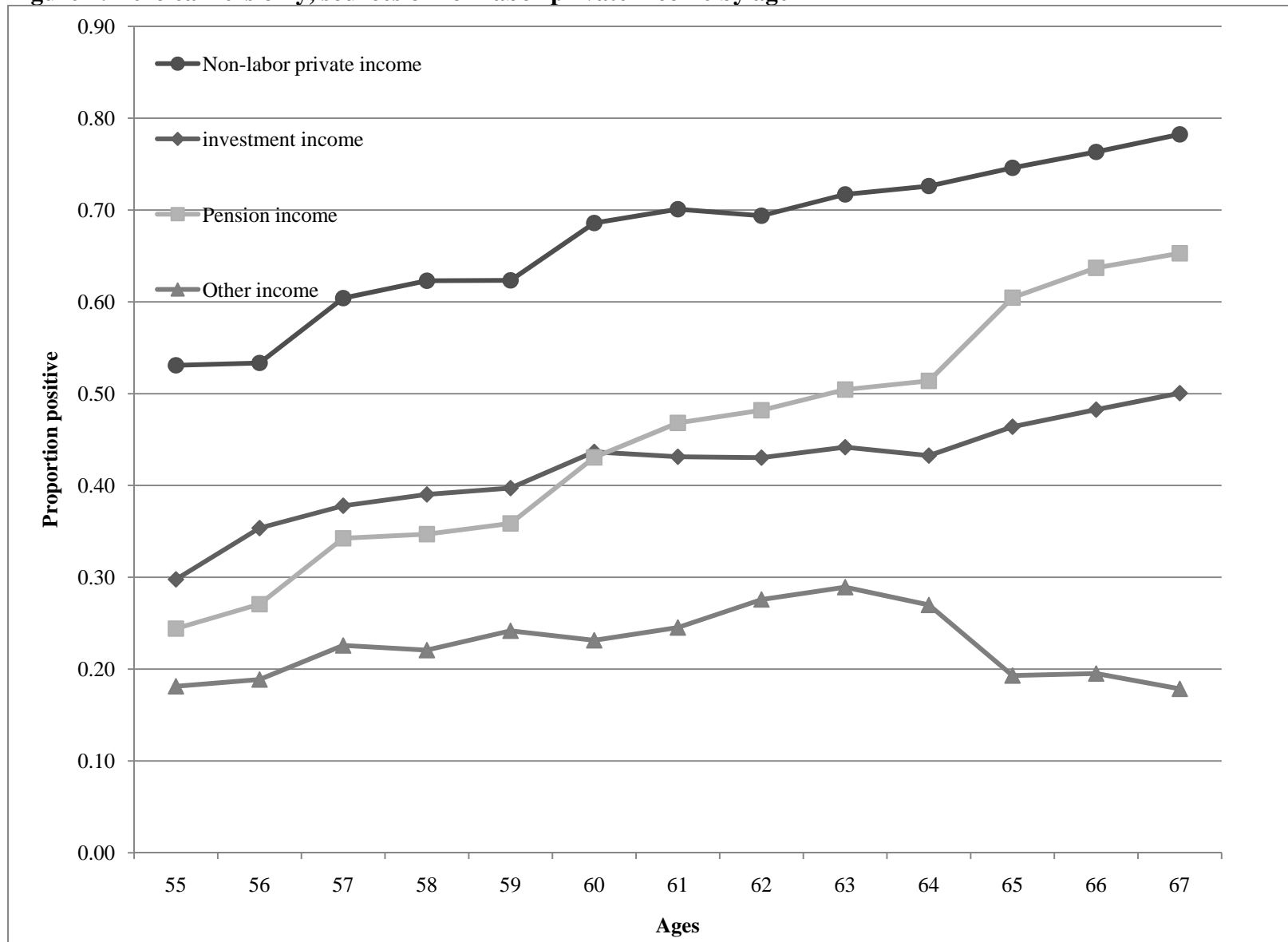
Source: Author's calculations using the Survey of Labor and income Dynamics, 1993-2008

**Figure 6: Zero earners only, sources of government transfer income by age**



Source: Author's calculations using the Survey of Labor and income Dynamics, 1993-2008

**Figure 7: Zero earners only, sources of non-labor private income by age**



Source: Author's calculations using the Survey of Labor and income Dynamics, 1993-2008

**Table 1: Regression results on sample of age 55 to 59 men who worked at age 54**

	Earnings zero		Self-Assessed Retirement	
	(1)	(2)	(1)	(2)
Dependent variable mean	0.061	0.057	0.096	0.093
Number of observations	6011	5071	5483	4798
R Squared	0.103	0.119	0.129	0.134
Age 56	0.021 *** (0.007)	0.022 *** (0.008)	0.035 *** (0.007)	0.035 *** (0.008)
Age 57	0.047 *** (0.011)	0.046 *** (0.012)	0.080 *** (0.012)	0.082 *** (0.013)
Age 58	0.079 *** (0.017)	0.072 *** (0.018)	0.158 *** (0.020)	0.162 *** (0.023)
Age 59	0.095 *** (0.024)	0.099 *** (0.027)	0.204 *** (0.032)	0.200 *** (0.034)
Immigrant	-0.018 (0.016)	-0.012 (0.019)	-0.041 ** (0.016)	-0.035 ** (0.017)
Married	-0.012 (0.025)	-0.004 (0.027)	0.035 (0.025)	0.053 ** (0.026)
High School Graduate	0.001 (0.021)	-0.007 (0.024)	0.024 (0.026)	0.014 (0.028)
Some post high school	0.008 (0.021)	0.003 (0.023)	-0.008 (0.021)	-0.008 (0.022)
University degree	-0.003 (0.026)	-0.001 (0.029)	-0.026 (0.027)	-0.029 (0.029)
Years of Experience /100	0.028 (0.081)	0.033 (0.095)	0.032 (0.092)	0.023 (0.099)
Workplace pension	-0.025 * (0.015)	-0.036 ** (0.016)	0.047 *** (0.017)	0.047 *** (0.018)
Union or Collective	0.017 (0.014)	0.023 (0.015)	0.055 *** (0.020)	0.056 *** (0.021)
Full time	-0.148 ** (0.070)	-0.159 ** (0.077)	-0.094 *** (0.036)	-0.076 ** (0.034)
Public sector	-0.045 (0.032)	-0.059 (0.036)	-0.011 (0.031)	-0.016 (0.033)

(Table 1 continued on next page)

**Table 1 continued from previous page**

	Earnings zero		Self-Assessed Retirement	
	(1)	(2)	(1)	(2)
Spouse employed	-0.032 *	-0.039 *	-0.042 **	-0.053 **
	(0.018)	(0.022)	(0.020)	(0.021)
Spouse full time	0.007	0.010	-0.008	-0.004
	(0.016)	(0.019)	(0.016)	(0.017)
Spouse age difference	0.000	-0.001	0.000	0.000
	(0.002)	(0.002)	(0.002)	(0.002)
Health fair/poor	--	0.010	--	0.012
		(0.023)		(0.034)
Spouse fair/poor	--	-0.021	--	-0.051 ***
		(0.020)		(0.019)
Work limitation	--	0.014	--	0.023
		(0.021)		(0.026)

Reported are coefficients from linear probability model ordinary least regressions with a different specification in each column. Standard errors are robust corrected for heteroskedasticity and clustered by individual. Also included but not reported here are year dummies (1994-2008), province dummies (10), occupation group dummies (10), industry dummies (16),

**Table 2: Regression results on sample of age 60 to 54 men who worked at age 59**

	Earnings zero		Self-Assessed Retirement	
	(1)	(2)	(1)	(2)
Dependent variable mean	0.119	0.114	0.218	0.212
Number of observations	3772	3142	3425	2968
R Squared	0.094	0.097	0.220	0.234
Age 61	0.050 *** (0.012)	0.047 *** (0.012)	0.076 *** (0.014)	0.072 *** (0.016)
Age 62	0.090 *** (0.017)	0.086 *** (0.019)	0.142 *** (0.019)	0.139 *** (0.021)
Age 63	0.153 *** (0.025)	0.140 *** (0.027)	0.175 *** (0.027)	0.174 *** (0.031)
Age 64	0.175 *** (0.036)	0.185 *** (0.040)	0.237 *** (0.040)	0.274 *** (0.047)
Immigrant	0.021 (0.021)	0.022 (0.024)	0.006 (0.028)	0.017 (0.030)
Married	0.046 * (0.027)	0.057 * (0.032)	0.084 * (0.044)	0.091 * (0.048)
High School Graduate	-0.010 (0.028)	-0.009 (0.030)	0.057 (0.035)	0.075 ** (0.037)
Some post high school	0.024 (0.022)	0.022 (0.023)	0.062 ** (0.026)	0.070 *** (0.027)
University degree	0.041 (0.034)	0.041 (0.038)	0.103 *** (0.039)	0.117 *** (0.043)
Years of Experience /100	0.075 (0.096)	0.001 (0.001)	-0.128 (0.143)	-0.082 (0.165)
Workplace pension	-0.028 (0.024)	-0.015 (0.028)	0.089 ** (0.035)	0.105 *** (0.037)
Union or Collective	0.065 *** (0.021)	0.073 *** (0.025)	0.074 * (0.040)	0.082 ** (0.041)
Full time	-0.115 ** (0.046)	-0.108 ** (0.047)	-0.293 *** (0.048)	-0.290 *** (0.048)
Public sector	-0.030 (0.040)	-0.066 (0.041)	0.018 (0.063)	0.001 (0.064)

(Table 2 continued on next page)

**Table 2 continued from previous page**

Spouse employed	-0.038 (0.023)	-0.041 (0.027)	-0.013 (0.030)	-0.021 (0.031)
Spouse full time	0.011 (0.020)	0.016 (0.022)	-0.021 (0.026)	-0.021 (0.028)
Spouse age difference	0.000 (0.002)	-0.003 (0.002)	-0.005 ** (0.002)	-0.005 ** (0.002)
Health fair/poor	--	0.001 (0.033)	--	-0.017 (0.037)
Spouse fair/poor	--	-0.010 (0.027)	--	-0.016 (0.039)
Work limitation	--	0.044 * (0.026)	--	0.061 (0.038)

Reported are coefficients from linear probability model ordinary least regressions with a different specification in each column. Standard errors are robust corrected for heteroskedasticity and clustered by individual. Also included but not reported here are year dummies (1994-2008), province dummies (10), occupation group dummies (10), industry dummies (16),

**Table 3: Impact of supplemental sources of income on hardship**

	Proportion positive	Mean if positive	Median if positive	Proportion lifted out of low income
Spouse income	0.631	22070	14429	0.377
Other non-spouse family income	0.510	21722	10257	0.252
Total family income	0.733	34129	21939	0.523
Own RRSP withdrawals	0.102	5203	4000	0.089
Other family RRSP withdrawals	0.151	7532	5117	0.104
Total RRSP withdrawals	0.151	11040	7498	0.116
Help from any above source	0.746	35741	23641	0.548

Data from Survey of Labour and Income Dynamics. Sample includes non-earning men with own-income below the family Low Income Cut Off.