The Retirement Behaviour of Married Couples: Evidence From the Spouse's Allowance

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Abstract

I examine the effects of the introduction of the Spouse's Allowance to the Canadian income security system in the 1970s on the retirement behaviour of couples. This policy intervention provides an excellent opportunity to investigate how income security programs affect the timing of retirement. The structure of the Allowance also provides a view of how programs targeted at one spouse can affect the behaviour of the other. Finally, conditional of the types of data available for this time period, the analysis considers the joint labour market decisions of couples. The results indicate that the introduction of the Allowance decreased the employment rates and increased the not in the labour force rates of eligible males and females. Corresponding changes in the joint occupation of these states are observed among eligible couples.

1. Introduction

It is widely acknowledged that the aging populations of most developed countries present one of the greater public policy challenges of the next century. Government transfers to the aged are typically one of the fastest growing components of government expenditure and many public pension plans are in poor fiscal health. As a result, resources have been channeled into research on retirement behaviour. There is growing recognition, however, that the greater part of this research may miss part of the story. Traditionally, the focus has been on males modeled as independent decision makers. Yet the upward trend in the labour market participation of females implies that they will be both part of the "retirement problem", as well as any solution.

If the retirement behaviour of both males and females is of interest, then so is the institution in which so many economic decisions get made: the family. That said, the retirement behaviour of couples is a topic on which there is but a handful of studies.[1] The scarcity of appropriate data, the complexity of the family decision making process and the historically low labour market activity of women have meant that many of the basic characteristics of couples' retirement behaviour—the incidence of joint retirement; the influence of one spouse's economic opportunities on the retirement decision of the other spouse—are unknown or have just recently been explored. If the retirement decisions of couples are strongly connected, the reasons must be an important input to any reform of social security programs. Alternatively, many social security programs would appear to tie the retirement decisions of couples. Understanding the effects of any incentives for joint decision making is critical to forecasting the future fiscal balance of these programs in a labour market of dual

[1] Recent research on the retirement behaviour of couples includes Hurd (1990), Blau (1997) and Blau (1998)....

worker families.[2]

Canada has a number of income security programs for seniors which would appear to induce interdependence in labour market behaviour.[3] In this paper, I examine the introduction, in the 1970s of one of them: the Spouse's Allowance, a program nominally designed to aid couples attempting to live on one pension. Because females tend to marry older males, and males have historically been the primary earners, many Canadian couples of limited resources found themselves in precarious circumstances at retirement. The Canadian income security system of the 1970s was made up of two age related benefits that were available at age 65, and an earnings related public pension available at this same age. Assuming joint retirement, many couples would retire when the male turned 65 with only his income security benefits as support. The Spouse's Allowance made the age related benefits of the system available to individuals (typically the female) at age 60 if they were married to someone who was 65 or older.

I examine how the introduction of this program (aimed in most cases at females), affected the retirement decisions of the eligible couples. It must be acknowledged at that outset, that older females in the 1970s did not have high labour market participation rates, and so the potential for any effect on their behaviour is in some sense bounded. Nevertheless, this is a period of rising female labour market activity, so that that the effect of the program may have been to remove women eligible for the Allowance from this trend.

The empirical strategy is to compare (separately) changes in retirement behaviour of males (65-75) and females (60-64) who became eligible for the Spouse's Allowance to that of their counterparts of the same age, who due to the age of their

[2] For example, Blau (1997) examines how the spouse benefit provision of the US Social Security system has effects on labour market activity of both married males and females.

[3] Gruber 1997 provides a simulation analysis of the tax incentives of various Canadian income security programs, highlighting the effects of means tested programs which are based on family income.

spouse did not qualify for an Allowance. I also provide some evidence on joint labour market status, although the analysis is limited by the lack of panel data for this period.

The results indicates that the introduction of the program is correlated with a decrease in employment rates and increase in not in the labour force rates for eligible males. They provide further evidence of how government income security programs can influence the retirement behaviour of individuals, and how in this instance males responded to a program which was targeted in effect at their spouses. I also observe reductions in labour market activity among eligible females although in this case there are difficulties separating the effects of the Allowance from those of the Canada Pension Plan in this period. Finally, there is some evidence that the introduction of the program is correlated with a increase in joint absence from the labour market among eligible couples, although it is not possible to empirically verify that this represents joint retirement.

2. The Canadian Income Security Programs

Canada's social security system , circa the 1970's, had the same three main components present today: the Old Age Security (OAS) pension established in 1952,[4] the Guaranteed Income Supplement (GIS) established in 1967 and the Canada Pension Plan (CPP; Quebec Pension Plan (QPP) for workers in Quebec) established in 1966. The OAS at this time was an unconditional cash benefit paid to individuals who satisfied age and residency requirements.[5] Starting in 1970, all individuals 65 years of age or greater were eligible for this benefit. The GIS was (and still is) a means tested supplement for OAS pensioners. Benefits were not subject to in-

[4] The 1952 Old Age Security Act replaced legislation from 1927, through which the federal government shared the cost of provincial means-tested benefits for the elderly.

[5] There is now a clawback of benefits from high income individuals.

come tax, and there were different benefit rates for single and married persons. Finally, the retirement portion of the CPP and QPP pension was, with some exceptions, similar to its present manifestation. Benefits were calculated on the basis of an individual's earnings history starting at age 18, and available starting at age 65 (presently benefits can be claimed as early as age 60).[6] The benefits payable under these three programs over the 1970's are graphed in figure 1.[7]

Both OAS and CPP/QPP benefits were paid out at the individual level, and the programs' regulations did not directly tie the retirement decisions of spouses.[8] There has always been a direct interdependence, however, in the GIS program. The amount of GIS benefits is based on family income excluding OAS benefits and a few other minor exemptions. For married individuals, how benefits are taxed back under the means test depends on whether both are pensioners. The rules in the 1970's were: 1) if both members of a couple were pensioners (65 or older) the benefits of each were taxed back at a rate of 25 percent for each dollar of monthly family income in excess of the family's combined OAS benefits (for a combined tax rate of 50 percent at the family level), and 2) if only one member of the couple was a pensioner, the monthly benefit was taxed back at a rate of 25 percent for each dollar of monthly family income in excess of the OAS pension, and the initial reduction did not occur until annual family income exceeded roughly 12 times the monthly OAS benefit.[9]

It is important to account for changes in these programs over the sample period, as any reforms could potentially bias inference about the Spouse's Allowance.

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[6] Further details of these programs can be found in Baker and Benjamin (1998a and 1998b), Burbidge (1987) CCH Canadian Limited (1996), Gruber (1997) and Pesando and Rea (1977).

[7] As a point of reference, as of January 1998 the OAS pension is $407.15, the maximum CPP pension for retirement at age 65 is $744.79 and the maximum GIS benefits for single and married individuals are $483.86 and $315.17, respectively.

[8] In fact, there is some interdependence between an individual and a deceased spouse through the survivor's benefit. The details can be found in Gruber (1997).

[9] Also, in this case an individual was eligible for the (larger) single person benefit.

The main changes in the public pension programs were the elimination of the earnings test for beneficiaries 65-69 from the CPP in 1975 and the QPP in 1977, and the end of the so-called "transition period" of both programs in 1976. Baker and Benjamin 1998a argue that the removal of the earnings test led to a significant increase in weeks worked conditional on employment among males 65-69. Although not formally analyzed, the results from that study also suggest that the end of the transition period (1966-1975) was correlated with an increase in pension receipt for males, 65 and older.[10] Over this period, individuals received only part of the "full pension" they qualified for, to account for the fact they had contributed to the plan for a short time. The pro-rating fraction rose linearly over the 10 year period, so that in January 1976 individuals could draw the full pension they qualified for subject to the other rules of the plan.[11] One could imagine that some workers may have delayed retirement until January 1976 so as to be able to draw a full pension. However, simulations of the present value of pension benefits at different retirement ages reveal that in the early 1970s the annual increase in the pro-rating fraction was roughly equivalent to an actuarially fair adjustment in pension benefits for delaying retirement.[12] That said, in the 1970s the CPP and QPP provided no explicit actuarial adjustment to benefits for delaying retirement beyond age 65, so with the end of the transition period many individuals would have had a strong incentive to initiate pension receipt at that age.[13]

For the OAS, the major reforms were the full indexation of benefits starting 1972, and a modification of the residency requirement in 1977. Finally, the GIS was

[10] An increase in pension receipt need not imply a reduction in labour supply in the absence of the earnings test Unfortunately, it is difficult to isolate the labour market effects of the end of the transition period since they are perfectly co-linear with a 1976 year effect.

[11] Further detail is provided in Baker and Benjamin 1998a and CCH Canadian Limited (1996).

[12] These simulations are calculated for an individual turning 65 in 1972 and are available from the author on request.

[13] The exception is for individuals whose further contributions to the plans would improve their earnings histories.

fully indexed in 1973.

3. The Spouse's Allowance

The Spouse's Allowance (SPA) came into effect October 1, 1975 to supplement the limited resources of couples living on the pension income of only one spouse, and more recently (1985) to enhance the circumstances of elderly widows and widowers. The program can be traced to a campaign promise of the Progressive Conservative party in the federal election of the early summer, 1974.[14] The Liberal party consequently embraced a largely identical proposal, and upon winning the election incorporated it into their Throne Speech of September 30, 1974. The Speech was quite specific about the proposal and in particular mentions October 1, 1975 as a target date for implementation. The necessary amendments to the Old Age Security Act were passed in June 1975, and the program began operations on the target date.

The original program provided benefits to individuals between the ages of 60 and 64, who were spouses of OAS pensioners. Like the GIS, benefits were means tested on the basis of family income, and not subject to regular income taxes. The maximum payment was equal to the sum of the OAS pension and the GIS benefit at the married rate. Therefore, the SPA potentially made a couple as well off as they would be if both members were 65 years of age or older; in effect the program allowed qualifying spouses to receive their OAS and GIS benefits up to five years earlier than other members of the population. The equivalency is not exact, however, since SPA benefits were taxed back at higher rates than GIS benefits for marginal family income. The effective tax on benefits was 75 percent for each dollar of monthly family income in excess of OAS and GIS benefits. This rate was in effect until an amount of the Allowance equivalent to an OAS pension was recovered (when family income equaled 4/3's of the OAS benefit). At this point, both the

[14] The original proposal envisioned a program covering spouses aged 55-65.

Spouse's Allowance and the pensioner's (the spouse 65 or older) GIS benefit were taxed back at a rate of 25 percent for additional family income. Therefore, at the family level, benefits were subject to effective tax rates as high as 75 percent.[15]

The program was revised in November 1978 and November 1979 to address the hardship faced by beneficiaries whose spouse died? Initially, if the pensioner spouse of an individual who was collecting an Allowance died, the SPA was terminated.[17] The financial circumstances of the widow or widower were further impaired by the fact that the deceased spouse's OAS and GIS benefits would also be lost. The widow/widower would eventually qualify for their own OAS and GIS benefits, but this could be more than 4 years in the future. The program rules were changed so that the SPA would continue to be paid to a widow/widower for at first 6 months after the death of the pensioner (1978), and subsequently until the individual reached age 65 and would qualify for his/her own OAS and GIS (1979).[18]

The program was subsequently revised again in 1985 to provide benefits to all low income widows or widowers, between the ages of 60 and 64, regardless of when their spouse died. This reform falls outside the sample period and will not be examined here.

4. The Predicted Effects of the Introduction of the Spouse's Allowance

The effects of the introduction of the SPA on the choice of family labour supply in a given year can be examined by examining the family budget constraint within the context of a simple Becker/Mincer model of the division of labour within the

[15] Family income for the purposes of the means test was calculated for the calendar year preceding the fiscal year (April-March) of application. In the year of retirement, however, couples were permitted to substitute an estimate of income for the current calendar year reflecting their new (presumably reduced) circumstances.

[16] The plight of widows and widowers was the main objections raised by opposition parties to the original SPA legislation.

[17] The SPA also ended if the couple became separated or divorced.

[18] Under the new rules the SPA would end if the individual was re-married.

household. Before the introduction of the Allowance the components of family income are assumed to be the pensioner's OAS and GIS and any labour market earnings of the couple. For simplicity the amounts of any CPP pension or other non labour income are assumed to be zero.[19] In figure 2, I graph family income against weeks of "leisure" in a given year. The distance AB is the amount of the pensioner's OAS pension ($1551 in 1975). ABCD is the family budget constraint in the absence of the GIS or the SPA. It is drawn assuming the husband has comparative advantage at market work, and that this advantage is manifest in the relative wage rates.[20] The slope of BC, therefore, is w_M the (after tax) male's wage, while the slope of CD is the female's wage, w_F.

The distance BE is the amount of the pensioner's GIS pension when the only other income is an OAS pension ($1088 in 1975). The reduction in the GIS with labour market earnings is drawn for a pensioner whose spouse did not qualify for a pension. This would be the most common case for couples who would subsequently qualify for the SPA. An initial amount of income roughly equal to the annual OAS pension is exempt for the purposes of the GIS means test. Therefore, the segment EF has the slope w_M. At point F, the marginal dollar of labour market earnings leads to a 25 cent reduction in the GIS, and therefore the slope of FG is $0.75w_M$. The GIS is completely taxed away at point G, which in 1975 was around $5903.

The introduction of the SPA shifts the budget constraint to AHIJCD. The distance EH is the amount of the SPA when labour market earnings equal zero.[21] The

[19] Any amounts of these sorts of income would have the effect of lowering the amount of the GIS pension when labour market earnings equal zero (and thus also lowering the "break even" level).

[20] The assumption that the male has comparative advantage in market work is adopted for its consistency with the traditional sexual division of market and non-market time common among older couples of this time. The assumption that the comparative advantage is manifest in wage rates is to retain a simple presentation within a standard labour supply diagram. A sufficient condition for this to be true is equal absolute advantage in non market work. Alternatively, the analysis could be conducted in a model of the allocation between market and non market goods without this simplification,

[21] In the figure, the distance also accounts for the reduction in the pensioner's GIS, which would now be paid out at the (lower) married person's rate.

SPA is taxed back at a rate of 75 percent for any earnings until an amount equivalent to the OAS is recovered. Therefore, the segment HI has the slope $0.25w_M$. Any additional dollar of family earnings leads to a 50 cent reduction in non OAS government support (the pensioner's GIS and the GIS equivalent portion of the SPA) which in 1975 totaled \$1933.[22] At point J all government assistance other than the pensioner's OAS is recovered which in 1975 occurred at labour market earnings of about \$5934.

The shift in the budget constraint with the introduction of the SPA leads to an unambiguous reduction in labour supply. Over the segment HIJ both an substitution effect and an income effect act to reduce weeks of work, assuming leisure is a normal good. Also, families initially locating near the break even point may have found it optimal to reduce labour supply to qualify for some government support. Only families who were initially a sufficient distance above point J, or had enough other non labour income to make the GIS and SPA irrelevant would be unaffected by the reform.[23]

In the diagram as drawn, any effect of the SPA would be visible in the male's labour supply, since if both members of the couple were working they would be located well above the break even point. For low wage families, however, the break even point might be beyond the kink at point C, and therefore both male and female labour supply would be affected. Note that in dual worker families, the model as drawn rules out any reductions of male labour supply without concurrent reductions in the female's work.[24]

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22 The pensioner's GIS and the remaining amount of the SPA are each taxed back at a rate of 25 percent. The total non OAS support is calculated using the GIS married benefit in 1975.

23 Note if both members of the couple were to qualify for the maximum CPP benefit (\$1633 annually) the GIS and SPA would be still be relevant although the break even levels would be much lower.

24 This is to say that the individual with comparative advantage in market work should be the last to leave the market.

5. Data and Empirical Strategy

Most of the analysis is based on the census family files of the *Survey of Consumer Finances,* from 1972, 1974, 1976, 1978 and 1980. These are retrospective surveys conducted in April of the indicated years. Relative to individual level files, these data exclude unmarried individuals living at home, who are of limited concern here given the focus on the elderly. The data for Quebec are excluded from the analysis sample. As noted above, the earnings test was removed from the CPP and QPP at different times in the period of analysis. It is convenient to treat these reforms as common time effects, and this is most easily accomplished if the data for Quebec are excluded.

The introduction of the Spouse's Allowance should have its primary effects on 1) individuals over the age of 64 who have spouses between the ages of 60 and 64, and 2) these same spouses. Given the common practice of females marrying older males, it seems reasonable to focus the analysis on males 65-75 and females between the ages of 60-64, whose spouses' characteristics satisfy the requirements of the SPA program.[25] In each case the strategy is to compare measures of the labour market attachment of these groups before and after the introduction of the Allowance.

This time series variation, however, is not sufficient. Clearly, there is the possibility of falsely attributing the labour market impacts of unobserved time effects which are concurrent with the introduction of the Allowance, to the SPA. More generally, secular trends in the labour market behaviour of these groups might also end up a SPA effect. Finally, any effects of reforms of the CPP around the time of introduction of the SPA must be accommodated. To account for these possibilities, I use the labour market behaviour of individuals of similar age, but whose marital circumstances render them ineligible for the SPA as control groups. For the analysis

[25] Males older than 75 are excluded because the age variable is truncated at age 76.

of males I consider three control groups: 1) males 65-75 with spouses aged 65-75, 2) males 65-75 with spouses aged 50-59 and 3) males 65-75 who are single. In each case these men are not eligible for the SPA.

An obvious objection to this strategy is that the men in the different control groups might differ from their counterparts whose spouses are 60-64 (and thus eligible for SPA) in both observed and unobserved ways. Any observable differences are controlled for directly in the estimation to extent that they are captured by characteristics available in the SCF's. Average unobserved differences across the groups are captured by fixed effects. The remaining worry is any heterogeneous impact of unobserved year effects, coincident with the introduction of the SPA, across the different groups. Here it is plausible that any biases work in opposite directions across the control groups, so that a comparison might bracket the true response. For example, relative to males in couples eligible for SPA, an upturn in the economy might engender a larger labour supply response from those with younger wives, but a smaller one from those whose wives are of similar age, and for whom joint retirement is already a reality. The bias from using single men as a control are less obvious, although this group does provide a nice counterfactual for the hypothesis that individuals' retirement decisions are made independently of their spouses' decisions and economic circumstances.

In the analysis of females the control groups are females aged 60-64 with spouses aged 1) 50-59 years and 2) 60-64 years old. In this case it is not possible to use single females, 60-64, as a control group. As noted above some of these individuals became eligible for the SPA in 1978 and 1979 under the new provisions for widowers.

Some selected mean characteristics of these various groups are reported in table 1. For males, the most striking differences are in average age and the presence of children who are enrolled full time in school. SPA eligible males are a full two years younger than males whose spouses are 65-75, but marginally older than their coun-

terparts whose wives are 50-59. Also, this latter group of males is far more likely to have children at home enrolled full time in school. Among the different groups of females the largest differences are in educational attainment and urban residence. Those with spouses aged 50-59 are more likely to have more then a primary education and live in an urban area.

Other objections to the empirical strategy are the possibilities that individuals anticipated the policy change, or the program was introduced in response to some trend in the labour market behaviour of the target group. As noted above, the program gained public exposure in the federal election of 1974.[26] It is probably safe to assume that the Canadian public took the campaign promises of the various parties with a grain of salt. The program appeared on firmer ground in the Throne Speech of September 1974, although it is not unusual for governments to fail to implement their entire legislative agenda before their term ends. The data I use to measure labour market attachment before the introduction of the SPA are from April 1972 and 1974. These dates precede the dissolution of parliament on May 9, 1974 and the subsequent election campaign in which the SPA entered public debate. Also the social policy document that became the basis of the Progressive Conservatives' proposal for a spouse's allowance was released in May 1974. Therefore, it seems reasonable to assume that these data predate any wide public reliance on the promise of the SPA.

The motivation for the SPA, as revealed by parliamentary debate and subsequent Standing Committee discussion, was the hardship experienced by couples attempting to live on one pension.[27] Opposition criticism of the legislation centred on other needy groups among the elderly, and the fact that the program discriminated

[26] It was not, however, a dominant issue in the campaign. The wage and price controls proposed by the Progressive Conservative party took centre stage.

[27] See 30th Parliament (1975) and Standing Committee on Health, Welfare and Social Affairs (1975).

against poor individuals who were not married. The labour market status of the target population, however, was not absent from the discussions. In fact, the Minister of National Health and Welfare, Marc Lalonde, predicted little labour market response to the new program, stating, "The [SPA eligible] spouse is, in most cases, not a member of the work force and highly unlikely to be employed in any case" *(House of Commons Debates,* June 6, 1975).

To measure the effect of the introduction of the SPA on labour market behaviour, I estimate the equation

$$(1)\quad y_{it} = X_i'\beta + \gamma \cdot SPA_{it} + \lambda_1 . Y72_{it} + \lambda_2 \cdot Y78_{it} + \alpha . SPA_{it} . Y78_{it} + \lambda_3 . Y80_{it} + \epsilon_{it},$$

using samples of SPA eligible males or females and the various control groups from the 1972, 1974, 1978 and 1980 SCF's. Note that data from the 1976 SCF are (initially) not used because the survey week (April 1976) is not long after the introduction of the program (October 1975). y_{it} is a measure of labour market behaviour in the survey reference week. The X_{it} are a set of individual level demographic variables, SPA_{it} is a dummy variable which equals one if an individual is eligible for the SPA, $Y72_{it}$ and $Y80_{it}$ are year dummies that equal one in the indicated years, and $Y78_{it}$ = 1 in years 1978 and later (the SCF years that the Spouse's Allowance was available). Therefore, $\widehat{\alpha}$ provides the an estimate of the difference in the change in the dependent variable, y_{it}, between individuals who were eligible for the SPA and those in the control group, as the new program was introduced. The measures of labour market attachment examined (y_{it}) are employment and not in the labour force rates.

Two specifications of (1) are estimated. In the first, the X_{it} consist of a full set of province effects (the base specification). In the second, I add dummy variables for single year age categories, four education groups, urban residence (cities with population $\geq$ 30,0000), and for individuals who have any children enrolled full time at

school (expanded specification). As noted above, individuals who were eligible for the SPA could differ from those in the control group in unobserved ways. This argument extends directly to observable differences, so the results from the expanded specification provide an important check on the inference. Finally, all estimation is weighted least-squares using SCF sample weights, and the standard errors are corrected for heteroskedasticity following the method of White (1980).

6. An Overview of the Data

In figure 3, I graph the proportion of females 60-64 receiving a Spouse's Allowance in Canada in the 1970's using administrative data.[28] These data are for the fiscal year ending March 31. The proportion climbs quite quickly in 1976 when the program is established, and settles in the 14 to 16 percent range by the end of the decade. In the SCF data, roughly 30 percent of women aged 60-64 are spouses of males 65 and older and thus eligible for the SPA in this period. Therefore, by the end of the decade over one-half SPA eligible females are collecting the Allowance.

A view of labour supply over the period is provided in figures 4 and 5. In figure 4 I graph the proportion of females aged 60-64 who are out of the labour force in the reference week. For females eligible for the SPA this rate is fairly constant over the sample period. In contrast the rate falls for females with spouses 60-64 or 50-59. The profile for women with spouses 50-59 is somewhat erratic. This partly reflects small sample sizes: this group makes up only 7 percent of females 60-64 (sample sizes range by year from 82 to 136). Also, the composition of the group changes dramatically over the period. For example, the proportion with only a primary education rises from 29 percent in 1971 to 51 percent in 1977. This suggests that the time trends in the raw data could reflect composition effects, and that the condi-

[28] Note these data include the province of Quebec which is excluded from the regression analysis. A description of the data is provided in the appendix.

tional means from the regression analysis should be more informative. That said, using the experience of the control groups as the counterfactual, the graph suggests that the availability of the SPA is associated with a relative increase in the proportion not in the labour force. Starting in 1976, women who could collect the SPA did not share the falling NLF rates of their counterparts in the control groups.

The evidence for males is presented in figure 5. Again there would appear to be clear evidence of the effect of the SPA. The NLF rate for males in families eligible for the Allowance rises quite dramatically over the period. Part of this increase is also experienced by males in the other groups, but by the end of the period it is the rate for SPA eligible males that has risen the most.

These graphs suggest that the SPA may have had some effect on the labour supply decisions of the affected males and females separately. In figures 6 and 7, I present some evidence of joint labour supply. In figure 6, I graph the proportion of couples in which each member is NLF by the different comparison groups for the analysis of females. There is only modest evidence here that the introduction of the SPA is correlated with an increase in this behaviour. Stronger evidence is available for males. Here there is a clear, relative increase in joint absence from the labour market in couples eligible for the Allowance.

7. Results

In the first panels of tables 2 and 3 I present the estimates of equation (1) in both its base and expanded versions. The results for males, in the first panel of table 2 tell a fairly consistent story. Relative to each control group, men eligible for the SPA experienced a relative increase in their NLF rate and decrease in their employment rate with the introduction of the program. Regardless of specification or control group, the changes in the employment and NLF rates are nearly equal and opposite in sign signaling that movements in or out of unemployment are not part

of picture.[29] There is also broad agreement across the three control groups, with smaller estimates obtained relative to males with the youngest wives (aged 50-59). Finally, the addition of demographic characteristics in the expanded specification has relatively little effect on the results. Overall, the relative increase in the NLF rate for SPA eligible males is roughly 6-10 percentage points (expanded specification).

As noted above, there were changes to CPP around the time of the introduction of the SPA. The earnings test was eliminated and the transition period came to an end. These events would have affected both males who were eligible for the SPA and those in the various controls groups. Therefore, the net effect of these reforms should be captured in the estimate of the parameter on Y78 (the common year effect) assuming it is the same across these groups. The removal of the earnings test, however, only affected males between the ages of 65 and 69. Also, the end of the transition period might be expected to have had larger effects on younger males. It's correlated with an increase in CPP pension recipiency. Given limited lifespans and declining health with age, one could imagine the incentives to delay retirement until the end of the transition period were greater for males in their mid to late sixties than those in their seventies. While I do control directly for age in the expanded specification, there are no interactions between the age dummies and the year effects. Therefore, to accommodate age specific responses to the CPP reforms I add the an interaction between $Y78_{it}$ and $A6569_{it}$ to (1), where $A6569_{it}=1$ if the individual is 65 to 69 years old (the age range affected by the removal of the earnings test). The parameter on this variable is identified by any common change in labour supply for all males of these ages in the sample.

As is evident in the second panel of table 2, this modification leads to smaller

[29] This result is confirmed in separate estimates (not shown) for reference week unemployment rates.

estimates of the labour supply effects in some cases: the larger changes are for the results using single men and those with spouses 65-75 as a control. This might be expected, since as documented in table 1 these males tend to be older than those who are eligible for the SPA. Also, the results now display greater coherence across the different control groups. For example, the estimated relative increase in the NLF rate is between 7 and 9 percentage points. Finally, the estimates of the parameters on A6569 are the same sign (and magnitude) as the estimates of *SPA*. Given evidence in the literature of the effects of the earnings test reform and the end of the transition period, it would appear that these estimates are dominated by the latter.

A further refinement of this inference is presented in the third panel. Here I add the data for 1976 and use it to identify any effects of the removal of the earnings test and the end of the transition period. I add the year effect $Y76_{it}$ to (l), where $Y76_{it} = 1$ in the years 1976 and later, as well as the interaction $Y76_{it} \cdot A6569_{it}$ (but delete $Y78_{it} \cdot A6569_{it}$). The earnings test was removed in January 1975, so any effects should be apparent by April 1976 when the 1976 SCF was conducted. While the transition period did not end until December 1975, the end date was known well in advance (10 years) so that anyone delaying retirement to this point in time might be expected to have acted fairly quickly. I continue to identify the effect of the SPA with the parameter on $SPA_{it} \cdot Y78_{it}$, thus ignoring any response to this program which might be present in the 1976 data. The resulting estimates of *SPA* are marginally smaller than those in panel 2. The estimate of the relative increase in the NLF rate now ranges from 6 to 7 percentage points. Also, the estimates of A6569 do not change much in this new specification.

Corresponding results for females are presented in table 3. Identification of the SPA effect here is more problematic. The primary strategy is compare labour supply trends across females 60-64 whose spouses are 65-75 and thus eligible for the SPA, and their counterparts of the same age whose spouses are younger (60-64, and 50.

59). Note, however, that in contrast to the analysis in table 2, the couples in the control groups are not only ineligible for the SPA, but also unaffected (at least immediately) by the CPP reforms. Therefore, a simple comparison of labour supply across the groups could potentially confound the effects of all three reforms.

The base estimates for females in the first four columns of the top panel of table 3 are largely consistent with the results for males. Estimates of the increase in the NLF rate are on the order of 10 or 11 percentage points, and again the addition of the control variables has little effect. In contrast to the results in table 2, however, the estimates of the SPA effect are somewhat larger once the interaction for couples in which males are 65-69 is added (panel 2). Note that these males are only present in SPA eligible couples, so that in this specification the SPA effect is identified by a comparison of females with spouses 70-75 and those in the control groups. Also, in this case the estimates of A6569 are of opposite sign of the estimates of *SPA* although all statistically insignificant at conventional levels.

Finally, in the third panel of the table the data for 1976 are added. This potentially provides a firmer basis for inference if the assumed sequential effects of the different reforms are correct. The resulting estimates compare favourably to the results for males from this specification. The estimated relative increase in the NLF rate is 7 to 9 percentage points. Also, however, all the estimates of A6569 are very close to zero.

Because isolating the effect of the SPA on females is problematic, it is worth examining another identification strategy. It is possible to partly replicate the strategy used for males by exploiting variation across age groups. For example, one comparison which may be informative is of females aged 60-64 who are married to males aged 65-75, to females aged 50-59 who are also married to males aged 65-69. The age of the husbands is the same for each group, so it is more straightforward to capture any effects of the CPP reforms. Also, because the ages of the wives differ, only

the couples in which the wife is 60-64 qualify for the SPA. The downside to this approach is the possibility of attributing age specific labour market shocks to the introduction of the Allowance. Also, any dynamic effects of the introduction of the SPA on the younger females would bias the results.

This age based strategy amounts to using the comparison groups from the analysis of males (table 2) but examining the labour supply of the wives instead of the husbands. Therefore, an additional age based comparison is available: females in SPA eligible couples to 65-75 year old females who are married to 65-75 year old males. In this case, however, there is little to be gained, because 65-75 year old females will also potentially be affected by the CPP reforms. Therefore, this comparison simply transfers the problems separating CPP and SPA effects from the husbands to the wives.

The results using females 50-59 (married to males 65-75) as a control group are reported in the final two columns of table 3. The estimates of the increase in the NLF rate are smaller using this estimation strategy, although not inconsistent with the results for males. With the introduction of the data for 1976, however, the estimated parameter is roughly the same size as its standard error.

While the preceding evidence suggests the introduction of the SPA was correlated with decreased labour market activity of males and females, respectively, it does not provide any information on the joint labour market status of household members. In table 4, I present the results of re-estimating some versions of (1) substituting measures of joint labour market behaviour as the dependent variable. The variables examined are joint employment and NLF rates as of the survey week. The analysis is conducted for the different comparison groups from tables 2 and 3 (excluding single males). Note that the identification of the joint labour market variables is somewhat different than in the preceding results. For example, consider the estimates for SPA eligible couples using couples where the female is 60-64 and the

male is 50-59 as the control group. Any change in the behaviour of SPA eligible females is identified the same way as in the corresponding results in table 3 (i.e., relative to females of the same age). The measured change in behaviour for SPA eligible males, however, does not have a counterpart in table 2. Here the comparison is across males of different ages (males 65-75 to males 50-59) where in table 2 the age of the males is held constant. Therefore, the estimates for the joint labour market variables are not a simple mapping of the preceding inference.

The estimates in table 4 suggest that the introduction of the SPA is correlated with a decrease in joint employment and increase in joint absence from the labour market, although in some cases the estimates are imprecise. Note that the estimated reductions in joint activity are generally larger using the female control groups.

Do the estimates in table 4 signal joint retirement? Unfortunately, it is not possible to directly measure joint retirement without panel data. The results in table 4 may be consistent with joint withdrawal, but needn't imply it. To see this, let $P(h,w)$ represent the proportion of couples with joint labour market status (h, w), where h or w equals one if the husband or wife is employed. Note that employment and NLF do not exhaust the possible labour market states, but the sample unemployment rates for the sample individuals are generally less that 1 percent over the period. The results in table 4 indicate that $P(1,1)$ decreased and $P(0,0)$ increased with the introduction of the SPA. These events could be directly related, and thus represent joint retirement, also could simply represent flows into and out of $P(1,0)$ and $P(0,1)$ (or some combination of both).

The fundamental problem is of inferring gross flows from the net flows observed in the data. For example, returning to figure 2 it is certainly possible that the primary effect of the SPA was on male labour supply. In one earner families, the substitution and income effects of the SPA would lead to labour market withdrawal. In this case the increases in $P(0,0)$ reported in table 4 would be accounted for by

decreases in $P(1,0)$. The evidence in table 3 that the SPA also had an effect on females, and the evidence in table 4 of the reduction in $P(1,1)$ however, opens up the possibility that it encouraged joint retirement. Another possibility therefore is that the increase in $P(0,0)$ is accounted for by a combination of decreases in $P(1,1)$ and $P(1,0)$. There is no way of inferring directly from the estimates in table 4, however, which of these hypotheses, or any other that generates the observed sign patterns in the net flows, is true.

On another tact, note that the structure of the SPA, and in particular the high implicit tax rates on labour market earnings, are inconsistent with decreases in P(1,1) which don't map directly into increases in $P(0,0)$. If one member of the couple remained in the labour market, it is likely that much if not all of any Allowance would be taxed back. For example, in 1973 the average annual earnings (current dollars, positive earnings only) of males 65-75 was $5346 and of females 60-64 was $3273. As reference, if the SPA had been in effect in this year, all benefits would be taxed back (both the SPA and the pensioner's GIS) at annual family income of roughly $4,834. Therefore, this a priori argument can identify the estimated decreases in $P(1,1)$ as joint retirement assuming the identification strategy used in this paper accurately isolates the effect of the SPA on joint labour supply.

8. Conclusions

I examine the effect of the introduction of the Spouse's Allowance to Canada's income security system on the retirement behaviour of couples. This episode provides an opportunity to analyze couples' behaviour on the basis of a policy intervention rather than relying on cross section variation in benefit entitlement, which is likely correlated with other unobserved determinants of labour market decisions.

The Allowance provided an unambiguous incentive for individuals in eligible couples to withdraw from the labour market. I provide evidence the males and fe-

males in these couples responded to these incentives in the form of decreased employment rates and increased NLF rates. I also provide some evidence on changes in joint labour market status with the policy reform Unfortunately, due to the lack of panel data for this period, it is not possible to directly verify that these changes represent joint retirement.

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Table 1: Selected Characteristics of SPA Eligible Males and Females and Various Comparison Groups

Males, 65-75, Who are	SPA Eligible	With Spouses 50-59	With Spouses 65-75	Single
Age	68.17	67.75	70.21	69.71
Primary Education	0.644	0.656	0.625	0.746
University Graduate	0.011	0.006	0.013	0.012
Children Enrolled in School	0.052	0.206	0.014	0.008
Lives in Urban Area	0.518	0.498	0.573	0.527
Sample Size	2670	1857	4273	2467
Females, 60-64, Who are	SPA Eligible	With Spouses 50-59	With Spouses 60-64	
Age	62.23	61.32	61.56	
Primary Education	0.574	0.400	0.481	
University Graduate	0.006	0.009	0.008	
Children Enrolled in School	0.052	0.109	0.080	
Lives in Urban Area	0.518	0.643	0.598	
Sample Size	2670	529	1897	

Notes: Source: 1972, 1974, 1976, 1978 and 1980 census family files of the SCF. Observations for Quebec are deleted. The reported statistics are (weighted) means for the pooled sample of SCF's. For males, SPA eligible means the spouse is 60-64. For females, SPA eligible means a spouse 65-75. Urban area is defined by cities with a population of 30,000 or more.

Table 2: Estimates of the Effect of the Introduction of the Spouse's Allowance on Males 65-75 with Spouses who are 60-64

Control Group:	Males 65-75, with Spouses 50-59		Males 65-75 with Spouses 65-75		Males 65-75 who Are Single	
Specification:	Base	Expanded	Base	Expanded	Base	Expanded
Employed	-0.070	-0.063	-0.111	-0.095	-0.109	-0.095
	(0.039)	(0.039)	(0.028)	(0.028)	(0.031)	(0.031)
Not in the Labour Force	0.074	0.067	0.121	0.105	0.117	0.102
	(0.040)	(0.040)	(0.029)	(0.028)	(0.032)	(0.031)
Add Control for Males 65-69						
Coefficient (Expanded Specification):	Age 65-69	SPA	Age 65-69	SPA	Age 65-69	SPA
Employed	-0.055	-0.065	-0.061	-0.076	-0.046	-0.084
	(0.039)	(0.039)	(0.027)	(0.029)	(0.031)	(0.032)
Not in the Labour Force	0.074	0.071	0.076	0.082	0.059	0.089
	(0.040)	(0.040)	(0.027)	(0.029)	(0.031)	(0.032)
Add Control for Males 65-69 and Data for 1976						
Coefficient (Expanded Specification):	Age 65-69	SPA	Age 65-69	SPA	Age 65-69	SPA
Employed	-0.042	-0.054	-0.051	-0.065	-0.041	-0.065
	(0.038)	(0.035)	(0.025)	(0.025)	(0.029)	(0.027)
Not in the Labour Force	0.062	0.060	0.065	0.071	0.049	0.064
	(0.038)	(0.036)	(0.025)	(0.025)	(0.029)	(0.028)

Notes: Source: 1972, 1974, 1976, 1978 and 1980 census family files of the SCF. Standard errors in parentheses. Observations for Quebec are deleted. Base: province effects, year effects for 1971 and 1979 and dummy variables for individuals with spouses 60-64 and for observations in 1975 or later (plus interactions). The reported coefficients for SPA are for the interaction of these two dummy variables. Expanded: add single age dummies, urban residence indicator, 4 education categories and a dummy variable for the presence of any children who are enrolled full time in school. Sample sizes (with 1976 data)are: spouses 40-59 3614 (4384), spouses 65-75 5711 (6943) and singles 4203 (5137).

Table 3: Estimates of the Effect of the Introduction of the Spouse's Allowance on Females 60-64 with Spouses who are 65-75

Control Group	Females 60-64 with Spouses 50-59		Females 60-64 with Spouses 60-64		Females 50-59 with Spouses 65-75	
Specification:	Base	Expanded	Base	Expanded	Base	Expanded
Employed	-0.066	-0.081	-0.099	-0.100	-0.029	-0.028
	(0.051)	(0.051)	(0.032)	(0.032)	(0.036)	(0.036)
Not in the Labour Force	0.104	0.119	0.101	0.101	0.059	0.060
	(0.053)	(0.052)	(0.032)	(0.032)	(0.037)	(0.036)
Add Control for Males 65-69						
Coefficient (Expanded Specification):	Age 65-69	SPA	Age 65-69	SPA	Age 65-69	SPA
Employed	0.020	-0.095	0.014	-0.110	0.022	-0.027
	(0.026)	(0.053)	(0.027)	(0.036)	(0.024)	(0.036)
Not in the Labour Force	-0.021	0.133	-0.017	0.113	-0.027	0.058
	(0.027)	(0.054)	(0.027)	(0.036)	(0.024)	(0.037)
Add Control for Males 65-69 and Data for 1976						
Coefficient (Expanded Specification):	Age 65-69	SPA	Age 65-69	SPA	Age 65-69	SPA
Employed	0.001	-0.032	-0.000	-0.084	0.011	-0.004
	(0.023)	(0.033)	(0.022)	(0.024)	(0.021)	(0.034)
Not in the Labour Force	0.000	0.076	-0.002	0.091	-0.010	0.034
	(0.023)	(0.050)	(0.022)	(0.031)	(0.021)	(0.034)

Notes: Source: 1972, 1974, 1976, 1978 and 1980 census family files of the SCF. Standard errors in parentheses. Observations for Quebec are deleted. Base: province effects, year effects for 1971 and 1979 and dummy variables for individuals with spouses 60-64 and for observations in 1975 or later (plus interactions). The reported coefficients (SPA) are for the interaction of these two dummy variables. Expanded: add single age dummies, urban residence indicator, 4 education categories and a dummy variable for the presence of any children who are enrolled full time in school. Sample sizes (with 1976 data) are: spouses 50-59 2622 (3199), spouses 60-64 3749 (4567).

Table 4: Estimates of the Effect of the Introduction of the Spouse's Allowance on the Joint Labour Market Behaviour of Females 60-64, married to Males 65-75

Control Group: Males 65-75,	With Spouses 50-59		With Spouses 65-75	
	Both Employed	Both NLF	Both Employed	Both NLF
Specification				
Expanded	-0.035	0.075	-0.045	0.051
	(0.027)	(0.043)	(0.016)	(0.030)
Controls for Males 65-69	-0.035	0.076	-0.046	0.027
	(0.027)	(0.043)	(0.016)	(0.031)
Controls for Males 65-69 and 1976 data	-0.017	0.061	-0.031	0.033
	(0.024)	(0.040)	(0.013)	(0.027)
Control Group: Females 60-64,	With Spouses 50-59		With Spouses 60-64	
	Both Not Employed	Both NLF	Both Not Employed	Both NLF
Expanded	-0.115	0.055	-0.108	0.025
	(0.046)	(0.046)	(0.027)	(0.036)
Controls for Males 65-69	-0.117	0.112	-0.106	0.082
	(0.047)	(0.050)	(0.029)	(0.042)
Controls for Males 65-69 and 1976 data	-0.057	0.067	-0.085	0.061
	(0.044)	(0.043)	(0.026)	(0.035)

Notes: Source: 1972, 1974, 1976, 1978 and 1980 census family files of the SCF. Standard errors in parentheses. Observations for Quebec are deleted. Labour supply status is for the survey reference week. See notes to tables 2 and 3.

Figure 1: Real Monthly Benefits of the OAS, GIS and CPP

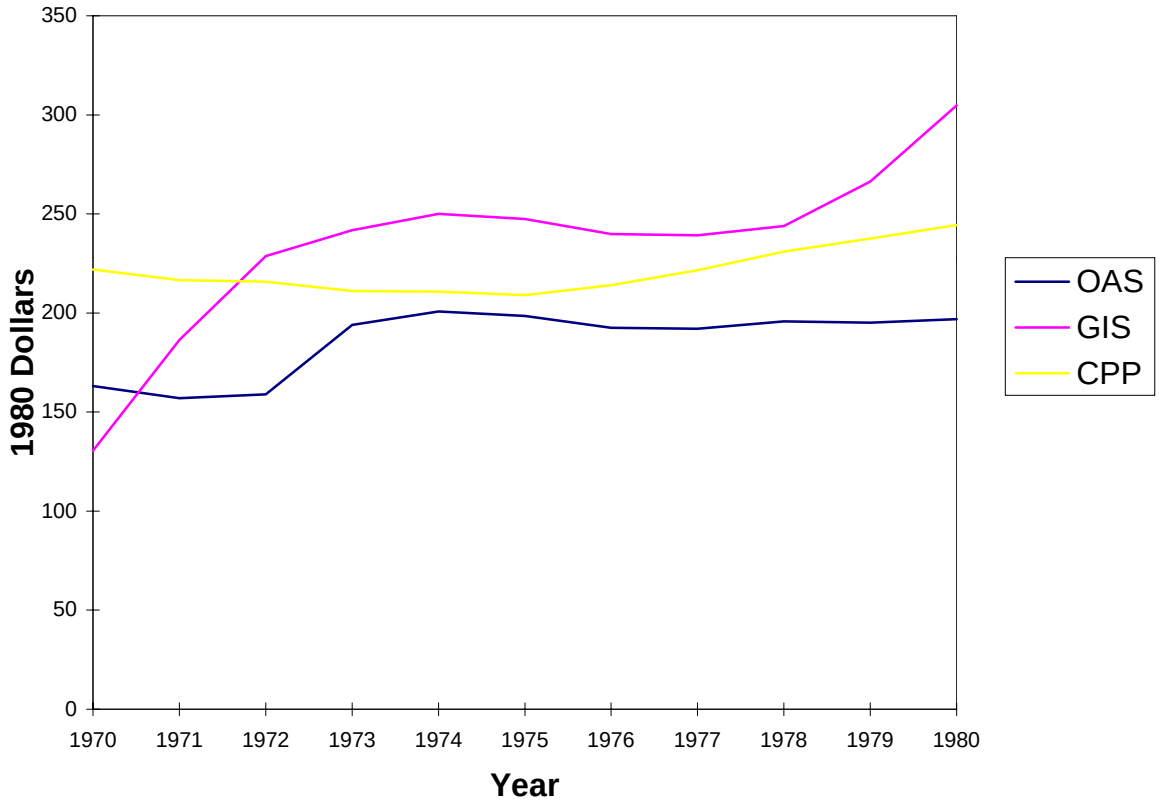


Figure 2: The Family Budget Constraint under the Spouse's Allowance

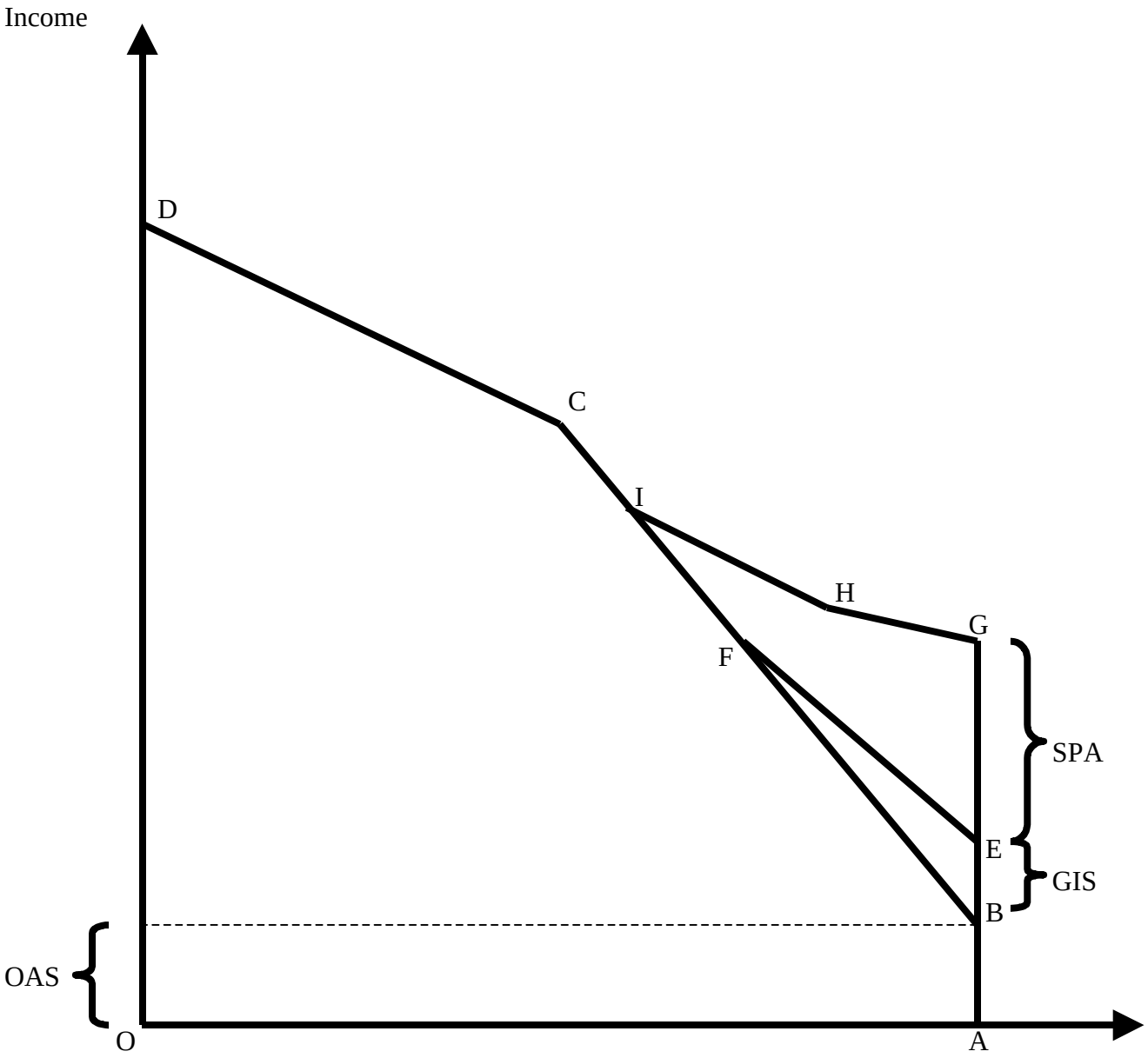
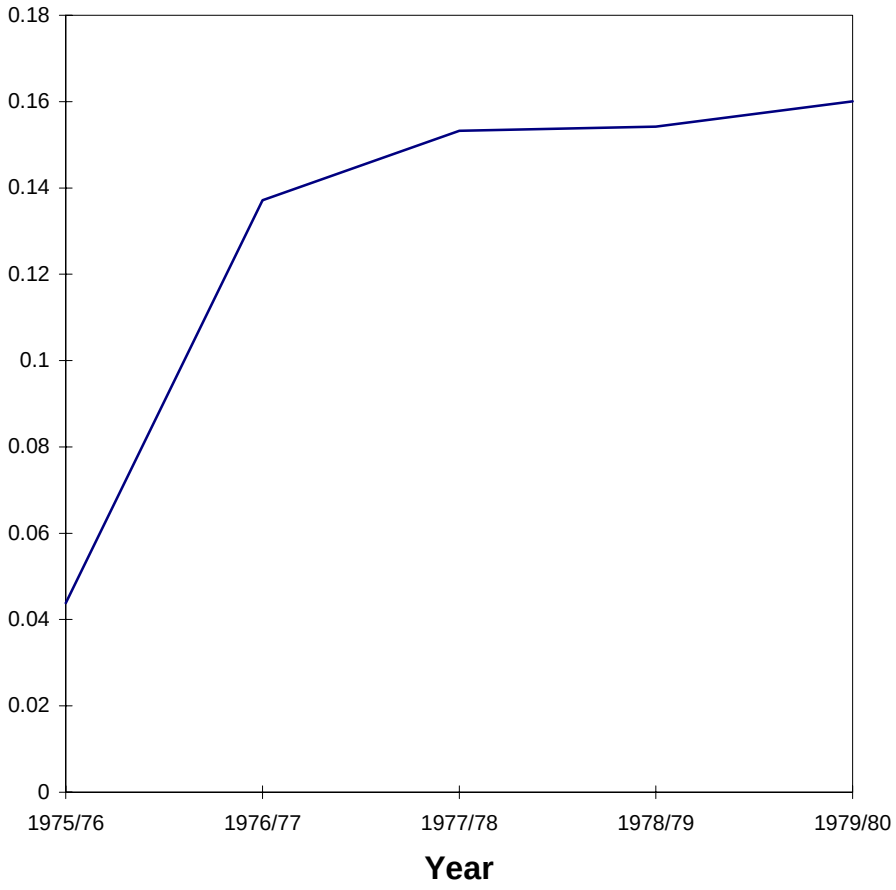


Figure 3: The Proportion of Females 60-64 Receiving a Spouse's Allowance, 1975-1979



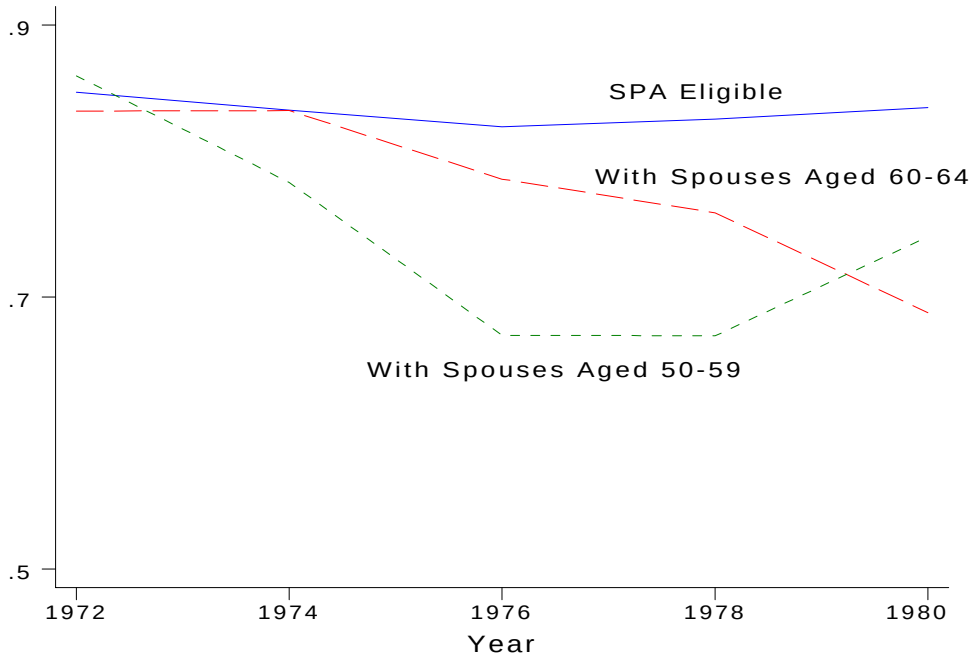


Figure 4: NLF Rates for Females Aged 60-64

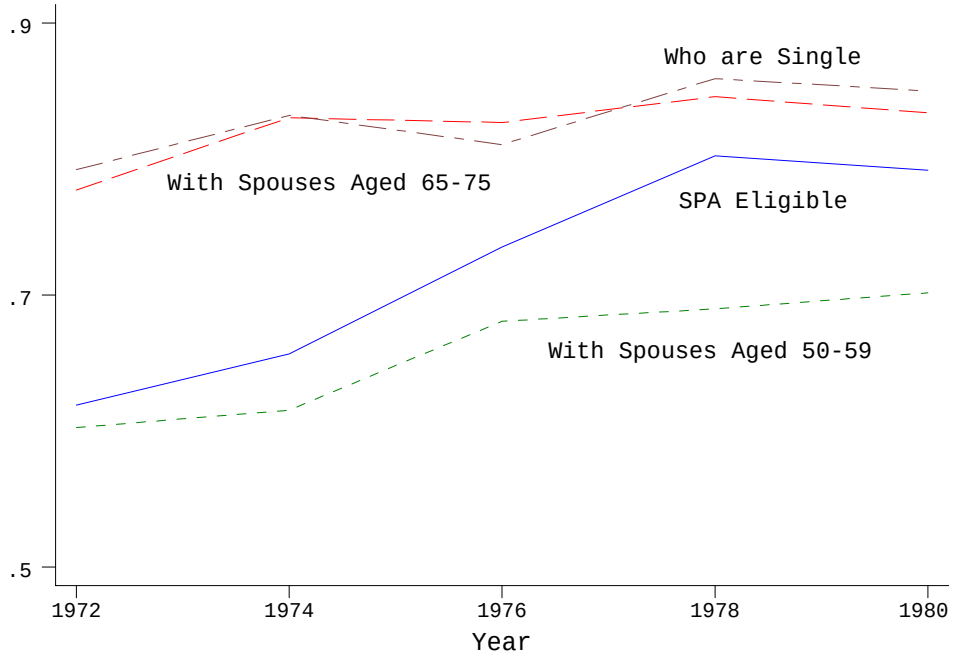


Figure 5: NLF Rates for Males Aged 65-75

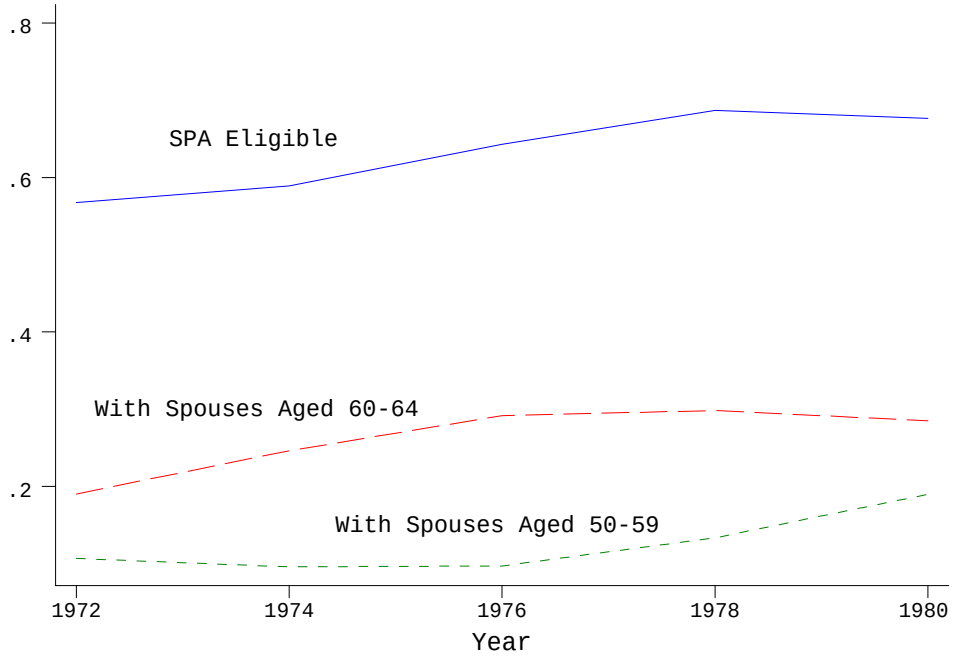


Figure 6: Joint NLF Rates of Females Aged 60-64

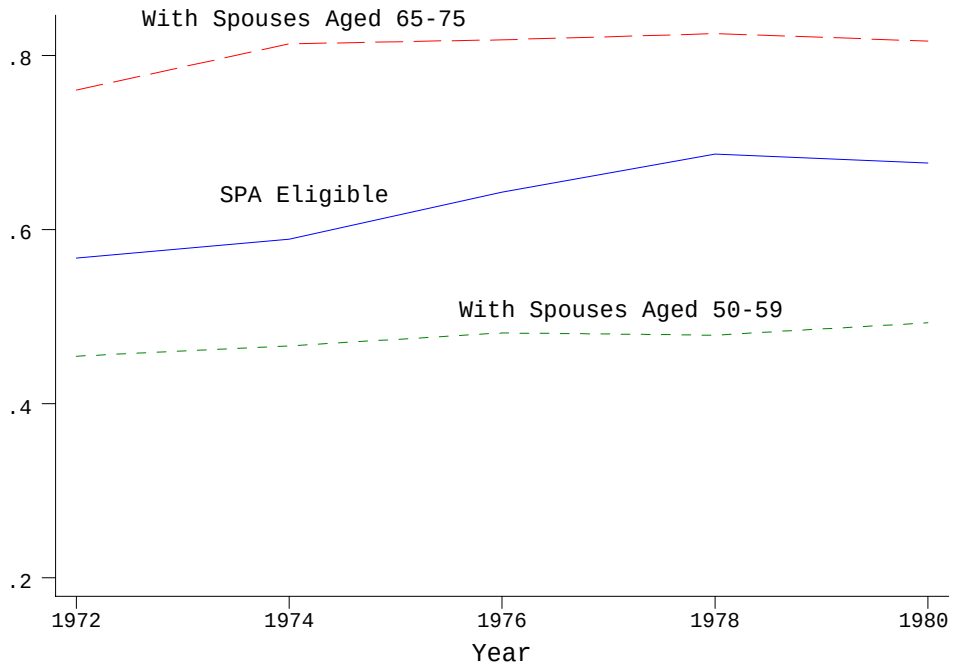


Figure 7: Joint NLF Rates for Males Aged 65-75