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# Pension Coverage and Earnings Replacement Rates Among Canadian Couples

by Yuri Ostrovsky and Grant Schellenberg

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## Symbols

The following standard symbols are used in Statistics Canada publications:

| | |
|---|---|
| . | not available for any reference period |
| .. | not available for a specific reference period |
| … | not applicable |
| 0 | true zero or a value rounded to zero |
| $0^s$ | value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded |
| $^p$ | preliminary |
| $^r$ | revised |
| x | suppressed to meet the confidentiality requirements of the *Statistics Act* |
| $^E$ | use with caution |
| F | too unreliable to be published |

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# Abstract

Using data from the Longitudinal Administrative Database (LAD), this paper compares the earnings replacement rates achieved in retirement by a sample of married and common-law couples in which the husband was aged 55 to 57 in 1991. Emphasis is placed on the outcomes experienced by couples in which one spouse or both spouses had registered pension plan (RPP) coverage and by couples without RPP coverage. The earnings replacement rates achieved by couples without RPP coverage are more widely dispersed than those of couples with RPP coverage. When compared at the mid-points of the pre-retirement earnings distributions, the **median** earnings replacement rates of couples without RPP coverage are about three to six percentage points **lower** than those of couples with RPP coverage. In contrast, the **average** earnings replacement rates of couples without RPP coverage are generally six to twelve percentage points **higher** than those of couples with RPP coverage.



**Key words:** retirement, pensions, seniors, income

# Executive summary

In spite of the importance of registered pension plans (RPPs) in discussions of Canada's retirement income system, very few Canadian studies have examined the financial outcomes experienced by RPP members and RPP non-members. In this study, we compare the earnings replacement rates achieved in retirement by a sample of married and common-law couples with and without RPP coverage in 1991 and/or 1992.

We find that couples without RPP coverage are less likely to be retired in 2006 than couples in which one spouse or both spouses have RPPs. Among couples without RPPs, those from the top of the 1989-1991 earnings distribution are far more likely to continue working until older ages than those from the bottom.

Among retired couples from the middle of the earnings distribution (i.e., Q2, Q3, and Q4), the earnings replacement rates of those without RPPs are more widely dispersed than those of couples with RPP coverage. Larger shares of retired couples without pensions than of couples with pension coverage have earnings replacement rates below 0.60, with the magnitude of this difference ranging from about ten to fifteen percentage points in Q2 and Q3, and from five to eight percentage points in Q4. However, couples without pensions are also more likely than couples with pension coverage to have earnings replacement rates of 1.00 or more, with the difference ranging from about seven to thirteen percentage points in Q2, Q3, and Q4. As a result of the asymmetric distribution of replacement rates among no-pension couples, different measures of central tendency yield different results. The **average** earnings replacement rates of retired couples without RPP pension coverage from Q2 to Q4 are generally six to twelve percentage points **higher** than the average rates of retired couples with RPP pension coverage. Conversely, the **median** earnings replacement rate of retired couples without RPP pension coverage is about three to six percentage points lower than that of retired couples with RPP pension coverage.

# 1 Introduction

The design of Canada's retirement income system and the extent to which working-age Canadians are saving adequately for old age continue to be important public policy issues. Registered pension plans (RPPs)[1] are an important consideration in this regard, both because they are a central component of Canada's retirement income system and because pension coverage and pension characteristics have undergone changes in recent years.

In spite of the importance of RPPs, very few Canadian studies have examined the financial outcomes experienced by RPP members and RPP non-members. One exception is Ostrovsky and Schellenberg (2009). Using longitudinal administrative data, Ostrovsky and Schellenberg examine the retirement and financial outcomes of individuals who were RPP members and individuals who were not RPP members when in their mid-fifties in 1991. Their results show that RPP non-members are more likely than RPP members to continue working into their late sixties and early seventies. Among individuals who have retired, the **average** earnings replacement rates achieved by RPP members and RPP non-members are not significantly different.

In a follow-up study, Ostrovsky and Schellenberg (forthcoming 2010) show that the shares of male RPP members and non-members with earnings replacement rates above or below various thresholds vary considerably. RPP non-members are more likely than RPP members to have earnings replacement rates below various thresholds. However, RPP non-members are also more likely than RPP members to have earnings replacement rates of 1.00 or more. The **average** earnings replacement rates are comparable between the two groups. However, the **median** earnings replacement rate of male RPP non-members is eight to twelve percentage points lower than that of male RPP members.

While these studies offer new insights on the outcomes experienced by individuals with different pension histories, their focus on individuals is a limitation. Individuals' decisions about savings and retirement are often made in a family context. A low replacement rate for one spouse may be offset by a high replacement rate for the other, a possibility not captured when individuals are the unit of analysis.

In this paper, the retirement and financial outcomes of couples are examined. More specifically, a sample of married and common-law couples in which the husband was aged 55 to 57 in 1991 is identified. Couples are categorized on the basis of their earnings and pension characteristics, and their earnings replacement rates are subsequently compared. Emphasis is placed on outcomes with respect to pension coverage. Among retired couples from the middle of the earnings distribution, those without pensions are more likely than those with pensions to have earnings replacement rates below various thresholds (e.g., less than 0.50 or less than 0.60). They are also more likely to have earnings replacement rates above various thresholds (e.g., 1.00 or more). In short, the financial outcomes of couples without pension coverage are more widely dispersed than those of couples with pension coverage. When earnings replacement rates are compared at the mid-points of the distributions, we find that the **median** earnings replacement rate of couples without pensions is about four to six percentage points **lower** than that of couples with pension coverage. In contrast, the **average** earnings replacement rates of couples without pensions are generally six to twelve percentage points **higher** than those of couples with pension coverage. Again, these results are attributed to the asymmetric replacement rate distribution among couples without pension coverage.

1. Registered pension plans (RPPs) are also referred to as *occupational pensions* or *workplace pensions*.

# 2 Data and methods

The data source and methods used for this study closely follow Ostrovsky and Schellenberg (2009). Data are from the 20% version of the Longitudinal Administrative Database (LAD), which is derived from taxation data. LAD files provide detailed information on both individual and family income for persons who filed an income tax return between 1982 and 2006. The 20% sample is randomly selected from all tax-filing Canadians. Once selected, individuals remain in the sample for as long as they appear on the annual T1 Family File.

The focus of this study on pension coverage has implications for sample selection. The information in the LAD does not allow RPP members and RPP non-members to be distinguished on the basis of retirement income received in old age. Instead, pension membership must be identified on the basis of pension contributions made while individuals are still in the workforce. Complete information on such contributions is available on the LAD back to 1991.[2] The age at which replacement rates are calculated is a further consideration for sample selection. As discussed in Ostrovsky and Schellenberg (2009), there is merit in calculating replacement rates for seniors when they are in their seventies, rather than in their sixties, since there is greater likelihood of capturing income streams following mandatory conversion of RRSP assets.

Given these considerations, sample selection for this study begins with husbands and male common-law partners who were aged 55 to 57 in 1991, and hence aged 70 to 72 in 2006. Information on these men is combined with information on their wife or female common-law partner, regardless of her age.[3] Because pension coverage is predicated on labour force participation, the sample is limited to couples who had positive earnings in each of 1989, 1990, and 1991. Couples' earnings are defined as the combined earnings of the husband and wife, and earnings are defined as the sum of T4-reported earnings (i.e., wages, salaries and commissions) and other employment income (tips and gratuities). Couples with average annual earnings over $750,000 are excluded to reduce the effects of large values in the denominator of replacement rate calculations. Self-employed couples are excluded because they are generally not eligible to contribute to RPPs.[4]

The pension characteristics of couples are based on the LAD Pension Adjustment variable. This variable includes both employer and employee contributions to RPPs, as well as contributions to deferred profit sharing plans. Positive Pension Adjustment values in 1991 and 1992 are coded to "1" to flag RPP membership in each year, while values of "0" are used to flag RPP non-membership. Each partner in the couple could have RPP coverage in neither, one, or both years, and 16 combinations of pension coverage are possible between them. To simplify matters, couples are grouped into five categories:

- neither spouse had pension coverage in 1991 or 1992
- only the husband had pension coverage in 1991 **and** 1992
- only the wife had pension coverage in 1991 **and** 1992
- both spouses had pension coverage in 1991 **and** 1992
- all other combinations.

2. See Ostrovsky and Schellenberg (2009) for a more detailed discussion of data and sample selection.
3. From this point forward, the term *husband* is used to refer to both husbands and male common-law partners, while the term *wife* is used to refer to both wives and female common-law partners.
4. Couples with net annual self-employment incomes totalling less than $500 are retained in the sample.

The last category includes couples in which one spouse or both spouses had pension coverage in either 1991 or 1992. While couples in the 'other' category are retained in the analysis and included in all totals, they are not shown in the tables and charts.[5] The terms *no-pension couple*, *husband-only pension couple*, *wife-only pension couple*, and *dual-pension couple* are used to refer to the four main groups.

Calculating average earnings over the three years from 1989 to 1991, and pension coverage over the two years from 1991 to 1992, improves the measurement of "pre-retirement" characteristics. However, this approach requires the sample to be limited to couples that were together over the 1989 to 1992 period. The sample is further restricted to those couples still together in 2006. **In short, the analysis examines the financial outcomes experienced by couples that were together over a consecutive period of at least 18 years.** This makes the analysis simple and transparent, since it is the same couples being considered over the entire reference period, and since the financial consequences associated with widowhood, divorce, or remarriage are factored out through sample selection. As a result, findings from the analysis are representative of the outcomes of "intact" or "surviving" couples, but may not reflect the outcomes experienced by widowed or divorced individuals or by common-law couples no longer living together.

The analysis is based on a sample of almost 53,000 couples. This accounts for about three-quarters of the couples that were together in the initial 1989-1992 period (Table 1). The loss of 26.2% of couples by 2006 is attributable to a number of factors, including divorce, widowhood, non-filing of tax returns, and unmatched administrative records.

**Table 1**
**Couples in which the male spouse/partner was aged 55 to 57 in 1991**

| | Couples | |
|---|---|---|
| | number | percent |
| Couples together in 1989 to 1992 | 71,300 | 100.00 |
| Those still together in: | | |
| 2003 | 57,150 | 80.20 |
| 2004 | 55,600 | 78.00 |
| 2005 | 54,050 | 75.80 |
| 2006 | 52,650 | 73.80 |

To calculate earnings replacement rates, a couple's total income received from all sources in 2006 is included in the numerator, and their average annual earnings in 1989-1991 are included in the denominator. The use of earnings in the denominator (as opposed to total income) is based on the argument that maintaining one's standard of living in old age requires one to replace only those sources of income that cease at retirement (Horner 2007). All earnings and income figures are expressed before tax and in constant dollars. Adjustments have not been made for changes in family size over the reference period. The couples in the sample resided in families that were, on average, comprised of 2.8 individuals in 1991 and 2.2 individuals in 2006.

5. This is done to reduce the size of the charts and tables and to make them clearer. The characteristics and outcomes of couples in the "other" category are not distinct, and the exclusion of the group from the discussion does not change the main findings.

# 3 Earnings and pension coverage circa 1991

Comparing the financial outcomes of couples with and without pension coverage is facilitated by taking pre-retirement earnings into account. This is because pension coverage, retirement transitions, and replacement rates are correlated with pre-retirement earnings. Couples in the sample are categorized into five groups of equal size on the basis of their 1989-1991 earnings. Couples in the first, or bottom, quintile (Q1) had average annual earnings of just under $27,000 in 1989-1991, while those in the top, or fifth, quintile (Q5) had average annual earnings of about $141,000 (Table 2). Among couples in the middle of the earnings distribution—that is, in Q2, Q3, and Q4—average annual earnings ranged from about $50,000 to $87,000.

Couples' pension characteristics vary markedly across quintiles. About three-quarters of couples in Q1 had no pension coverage in 1991-1992, while this was the case for about one-fifth of couples in Q4 and Q5 (Table 2). Couples in which only the husband had pension coverage were quite prevalent, accounting for 37% to 42% of couples in Q2, Q3, and Q4. Couples in which only wives had a pension accounted for about 10% of the sample in most quintiles; however, the prevalence of wives' pensions is also evident in the incidence of dual-pension couples, particularly in Q4 and Q5.

**Table 2**
**Selected characteristics of couples, by pension coverage and 1989 to 1991 earnings quintile**

| | Quintile 1 | Quintile 2 | Quintile 3 | Quintile 4 | Quintile 5 |
|---|---|---|---|---|---|
| | | | dollars | | |
| Lower bound of earnings quintile | 150 | 40,950 | 58,050 | 75,750 | 99,600 |
| Upper bound of earnings quintile | 40,950 | 58,050 | 75,750 | 99,600 | 749,050 |
| Average annual earnings | 26,900 | 49,750 | 66,700 | 86,550 | 141,050 |
| | | | percent | | |
| **Pension coverage, 1991 to 1992** | | | | | |
| Neither spouse has registered pension plan | 73.0 | 42.0 | 27.0 | 19.0 | 20.0 |
| Only husband has registered pension plan | 14.0 | 37.0 | 42.0 | 37.0 | 26.0 |
| Both spouses have registered pension plan | 0.4 | 2.0 | 8.0 | 20.0 | 32.0 |
| Only wife has registered pension plan | 7.0 | 9.0 | 10.0 | 10.0 | 9.0 |
| Other | 6.0 | 10.0 | 12.0 | 14.0 | 13.0 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| | | | dollars | | |
| **Couples' average annual earnings, 1989 to 1991** | | | | | |
| Neither spouse has registered pension plan | 25,250 | 49,000 | 66,100 | 85,800 | 164,750 |
| Only husband has registered pension plan | 32,450 | 50,300 | 66,700 | 86,200 | 139,650 |
| Both spouses have registered pension plan | 31,850 | 51,500 | 68,200 | 87,950 | 133,450 |
| Only wife has registered pension plan | 30,300 | 50,100 | 66,750 | 86,050 | 133,450 |
| | | | dollars | | |
| **Wives' average annual earnings, 1989 to 1991** | | | | | |
| Neither spouse has registered pension plan | 7,850 | 12,250 | 17,850 | 23,750 | 40,450 |
| Only husband has registered pension plan | 1,850 | 3,550 | 7,150 | 11,850 | 17,500 |
| Both spouses have registered pension plan | 13,750 | 20,700 | 26,750 | 34,350 | 50,950 |
| Only wife has registered pension plan | 25,050 | 34,800 | 39,100 | 44,600 | 56,850 |

Within most quintiles (particularly Q2, Q3, and Q4), couples' average annual earnings do not differ much between those with pension coverage and those without pension coverage. Q5 is a notable exception, as the average annual earnings of no-pension couples in that quintile are about $25,000 to $30,000 higher than those of couples with pensions.

A notable difference is the higher average annual earnings of wives with pensions than of wives without pensions. In Q3, for example, wives in dual-pension couples have average annual earnings of almost $27,000, and wives in wife-only pension couples have average earnings of about $39,000. In contrast, wives in couples in which only the husband has a pension have average earnings of about $7,200. These differences may be attributable to differences in labour force participation rates, annual hours worked, and/or hourly wages. The LAD does not contain information on work hours or hourly wages.

In the results presented below, couples in which only the wife has pension coverage are somewhat distinct. Again, the average earnings of wives in these couples are relatively high, and the average earnings of husbands are relatively low.[6] These couples also tend to retire later than others, and the earnings replacement rates they achieve post-retirement are more akin to those achieved by no-pension couples than to those achieved by husband-only pension couples and by dual-pension couples. So while the outcomes of wife-only pension couples are documented below, the primary comparison we draw is between no-pension couples, on the one hand, and husband-only pension couples and dual-pension couples, on the other.

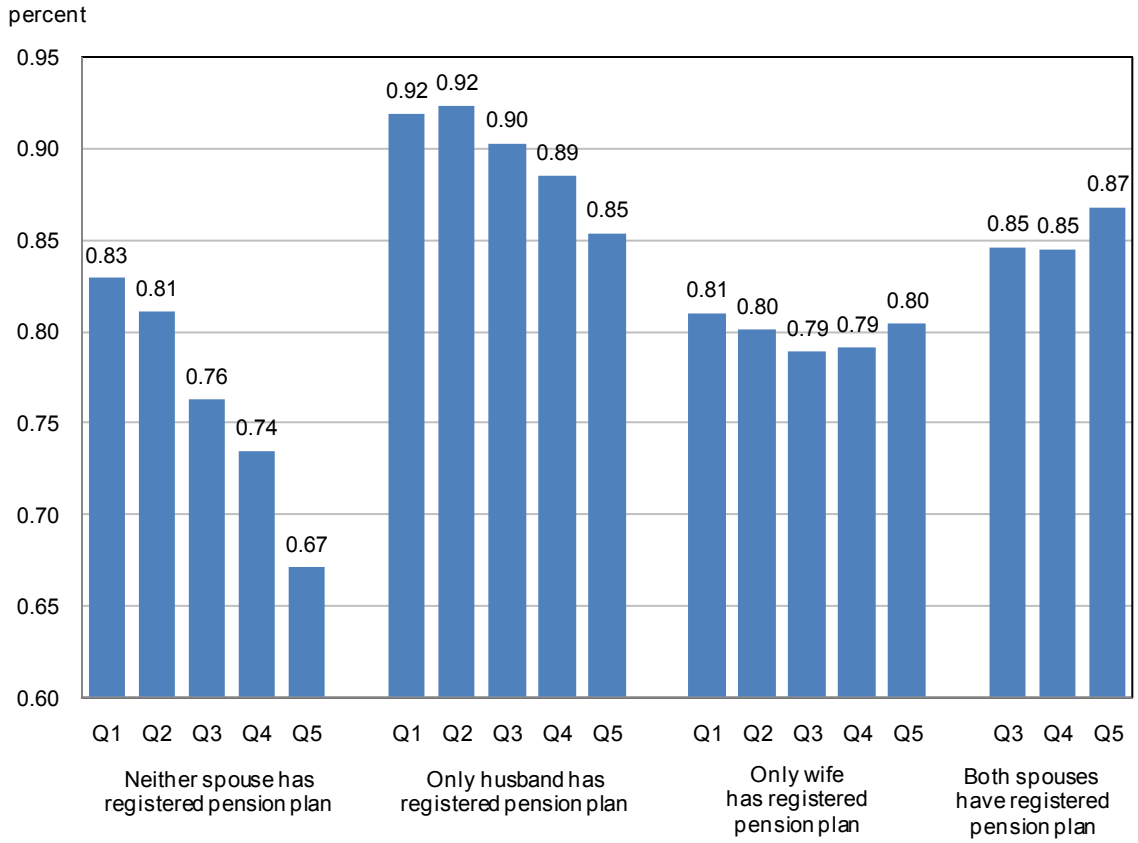
# 4 Retirement transitions

Labour force participation is an important consideration in replacement rate calculations. Including earnings in the numerator would increase post-retirement income and yield higher replacement rates than would result otherwise. For this reason, we begin by identifying retired couples, defined as those whose earnings in a given year are less than 10% of their average annual earnings in 1989-1991.[7] This definition allows for the possibility that retired couples may maintain some limited involvement in the paid workforce.

There is considerable diversity in the retirement transitions of couples—even among those in which one spouse or both spouses have a pension. As shown in Chart 1, about 90% of husband-only pension couples were retired in 2006. Wives in these couples had fairly modest earnings in 1989-1991; consequently, the couple's earnings likely fell below the 10% threshold once the husband left the workforce. In this respect, the labour force exit of these wives likely played a smaller role in the couple's retirement transition (at least in terms of earnings thresholds) than did the labour force exit of wives with higher earnings.

6. In Q2, Q3, and Q4, the average earnings of husbands in wife-only pension couples are about $20,000 less than the average earnings of husbands in no-pension couples.
7. An alternative approach is to identify couples in which neither, one or both spouses are retired, on the basis of individual earnings. This yields four retirement categories: neither spouse; spouse A; spouse B; and both spouses retired; when combined with the five earnings quintiles and the four pension categories, this number of categories results in an unwieldy amount of data.

**Chart 1**
**Percent of couples retired in 2006, by pension coverage and 1989 to 1991 earnings quintile**




Note: "Q" stands for quintile.

In contrast, couples in which only the wife has a pension are considerably less likely to be retired, with this the case for about 80% of such couples in 2006. In a study of retirement transitions among dual-earner couples, Schellenberg and Ostrovsky (2008) show that the likelihood of a wife continuing to work after her husband's retirement is positively correlated with the share of the couple's income contributed by the wife, with the wife having pension coverage or not, and with the age difference between spouses.[8] Wives in wife-only pension couples have relatively high earnings, have pension coverage, and tend to be younger than wives without pensions.[9] Given these characteristics, they have a higher likelihood of remaining in the workforce following their husband's retirement than other wives. This would maintain the couple's earnings above the 10% threshold and account for the pattern of later retirement observed.

Couples in which both spouses have a pension plan fall between the other two pension categories, with about 85% of dual-pension couples retired in 2006. (The number of dual-pension couples in Q1 and Q2 is very small, and hence they are not shown in the charts.)

Finally, couples in which neither spouse has pension coverage are among the least likely to be retired, although there is considerable variability in this regard across the earnings distribution.

8. Wives who are younger than their husbands are more likely to continue working after their husbands' retirement.
9. On average, wives in the sample who have pension coverage are 0.4 to 0.8 years younger than wives who do not have pension coverage.

While just over 80% of no-pension couples in Q1 and Q2 were retired in 2006, this proportion is 67% in Q5. The extent to which continued employment is motivated by choice or by financial necessity cannot be discerned from information in the LAD.

Charts 1 to 5 in the Appendix show the proportions of couples retired in each year from 2003 to 2006.

# 5 Earnings replacement rates in retirement

Focusing solely on retired couples, the earnings replacement rates are now compared across pension characteristics. Again, replacement rates are defined as each couple's total income in 2006 expressed as a percentage of its average annual earnings in 1989-1991.

The majority of retired couples from Q1 have earnings replacement rates of 1.00 or more, with this the case for 70% of no-pension couples and 53% of husband-only pension couples (Appendix Table 1). More broadly, about 85% to 95% of retired couples from Q1 have earnings replacement rates of 0.80 or more. The average and median rates also exceed 1.00. Given this pattern, our discussion focuses mainly on couples in the other four quintiles.

Beginning with measures of central tendency, we find that the **average** earnings replacement rates of retired couples without pension coverage are higher than those of retired couples with pension coverage.[10] In Q3, for example, retired couples without pension coverage have an average earnings replacement rate of 0.82, compared with an average rate of 0.75 among husband-only pension couples (Chart 2). More broadly, differences range from six to twelve percentage points, depending on which quintile and pension categories are compared.[11]

Interestingly, the difference in average replacement rates between retired couples with pension coverage and retired couples without pension coverage widens over the 2003-to-2006 period, particularly among couples in Q4 and Q5 (see Appendix charts 6 to 9). In Q4, for example, the difference in average replacement rates increases from three to four percentage points in 2003 to eleven to twelve percentage points in 2006 (Chart 3). Several factors may account for this. Couples that were not retired in 2003, for example, but were retired in 2004 were added to the sample and included in the replacement rate calculation for the latter year. Ostrovsky and Schellenberg (2009) show that replacement rates are positively correlated with the recency of retirement, and the upward trend in replacement rates evident among all couples is at least partly attributable to the addition of more recent retirees to the sample. The relatively large increase in replacement rates among couples without pensions may reflect particularly high replacement rates among those who delayed retirement until older ages. Another consideration is the fact that husbands in the sample were age 70 to 72 in 2006, and over the 2003-2006 period a growing share of them reached the age at which conversion of RRSP assets is mandatory. This may have a larger impact on the earnings replacement rates of couples without pensions, insofar as they have more RRSP assets to convert than do couples with pensions.

10. Couples in which only the husband has an RPP or in which both spouses have RPPs are the primary point of comparison throughout this discussion.
11. Readers should note that only 2% of couples in Q2 are those in which both spouses have an RPP. Hence, the mean and median replacement rates for this group refer to a small group and are based on a small sample.

**Chart 2**
**Mean earnings replacement rates of retired couples in 2006, by pension coverage and 1989 to 1991 earnings quintile**

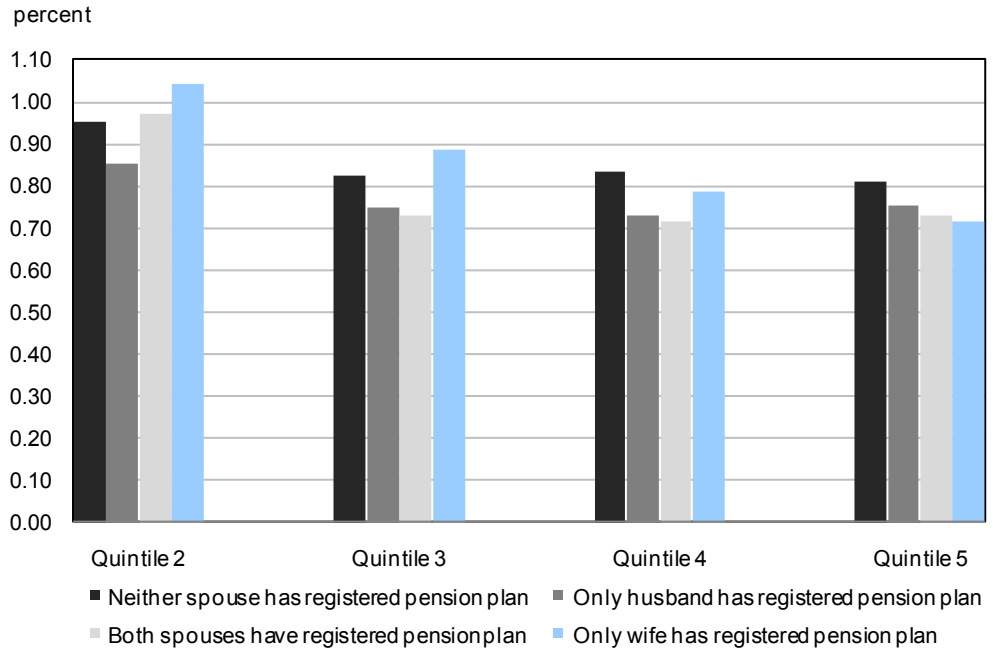
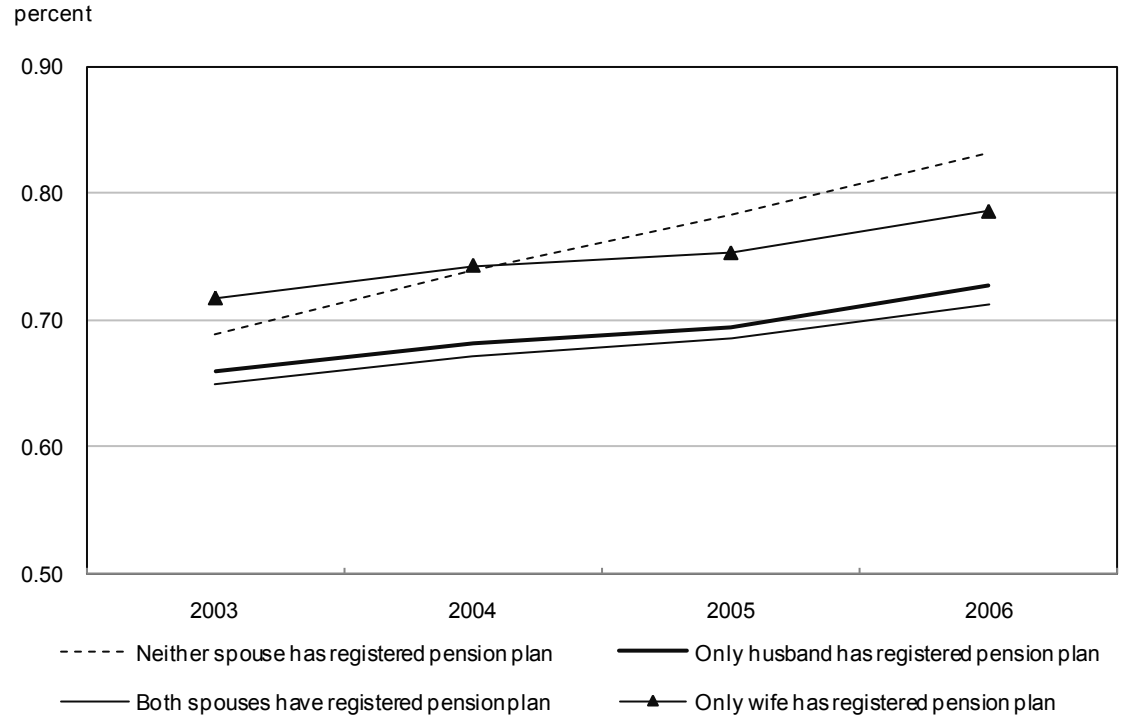


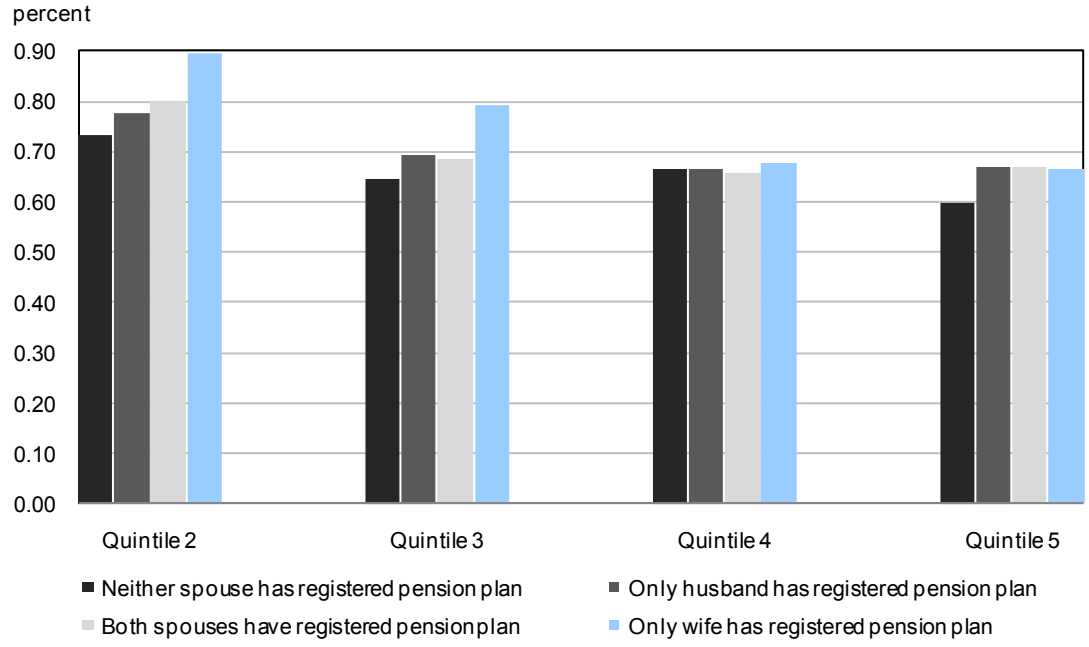

**Chart 3**
**Retired couples from Quintile 4: Mean earnings replacement rates, 2003 to 2006**



**Average** earnings replacement rates provide a summary measure that is sensitive to values at the tails of the replacement rate distribution. An alternative measure is the **median**, which identifies the mid-point of the earnings replacement rate distribution.

Among retired couples from Q2 and Q3, the median replacement rate of no-pension couples is about four to six percentage points below the median rates of husband-only pension couples and of dual-pension couples (Chart 4). This is the case over the entire 2003 to 2006 period (see charts 10 to 13 in the Appendix). Among retired couples from Q4, there is a difference of four percentage points in the median replacement rates in 2003, but this disappears by 2006.

**Chart 4**
**Median earnings replacement rates of retired couples in 2006, by pension coverage and 1989 to 1991 earnings quintile**




Among retired couples from Q5, the median earnings replacement rate of no-pension couples is seven to twelve percentage points below the medians of husband-only pension couples and of dual-pension couples over the 2003-2006 period.

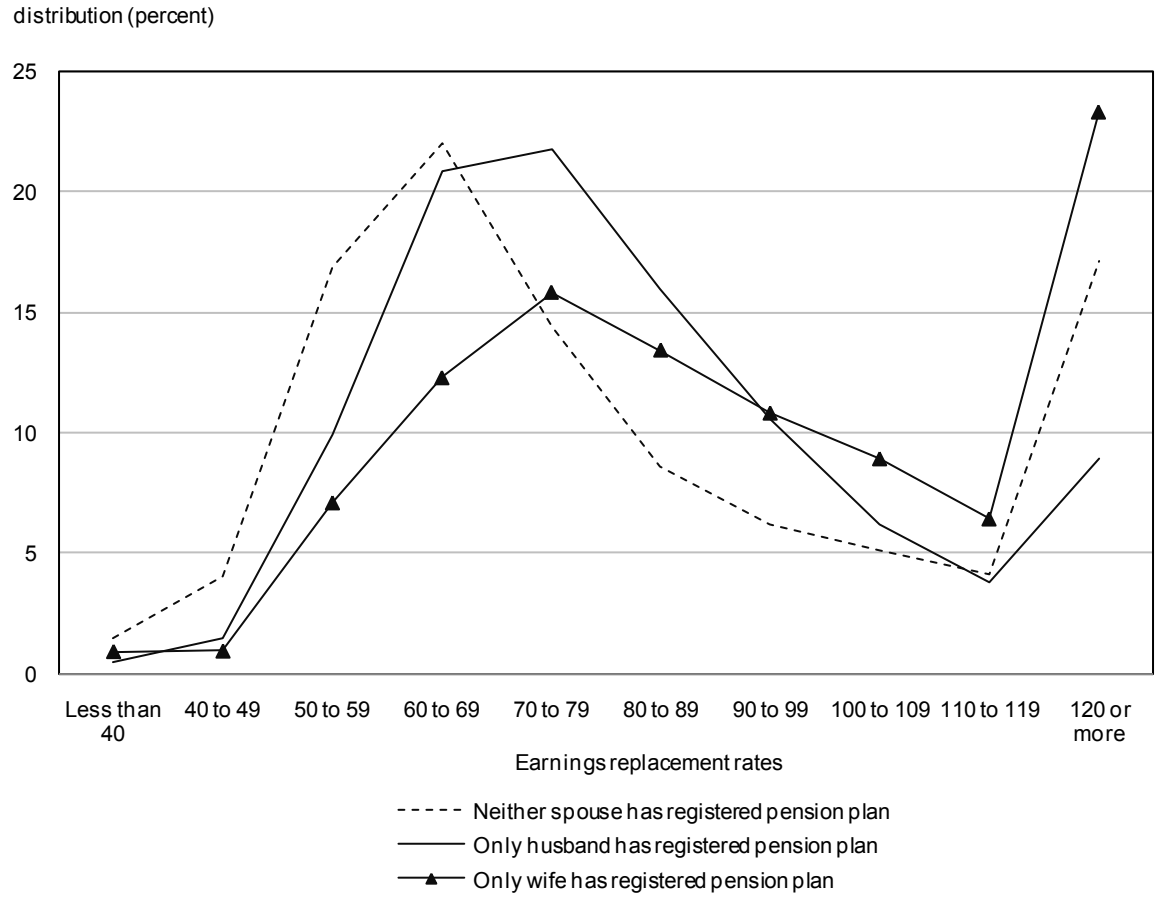
Differences between averages and medians described above indicate that the underlying distributions of earnings replacement rates differ between couples with and without pension coverage. This is indeed the case.

The earnings replacement rate distributions of retired couples from Q2 to Q5 are shown in Charts 5 to 8.[12] Generally, the largest shares of couples with pensions have replacement rates between 60% and 69%, and about one-half to two-thirds of couples with pensions have

12. The figures underlying these charts are presented in Appendix Table 1. Readers should note that charts show the percentage of couples in specific earnings replacement rate categories—40% to 49%, 50% to 59%, etc.—rather than the distribution of couples on a continuous scale from 1% to 100%. While a bar chart may be more appropriate given the categorical nature of the data, the line charts make it easier to compare the overall distributions of couples with different pension characteristics.

replacement rates between 50% and 79%.[13] In contrast, the replacement rate distributions of no-pension couples are further to the left on the charts; this indicates that larger proportions of such couples have lower replacement rates–often in the range of 40% to 59%. However, couples without pensions are also over-represented at the upper end of the distribution, especially relative to husband-only pension couples and no-pension couples.[14]

**Chart 5**
**Retired couples from Quintile 2: Distribution of earnings replacement rates in 2006**




13. This statement pertains primarily to retired couples in which only the husband has pension coverage or both spouses have pension coverage.
14. The comparisons between groups are similar when replacement rates are calculated as: total income before tax 2006 / total income before tax 1989-1991.

**Chart 6**
**Retired couples from Quintile 3: Distribution of earnings replacement rates in 2006**

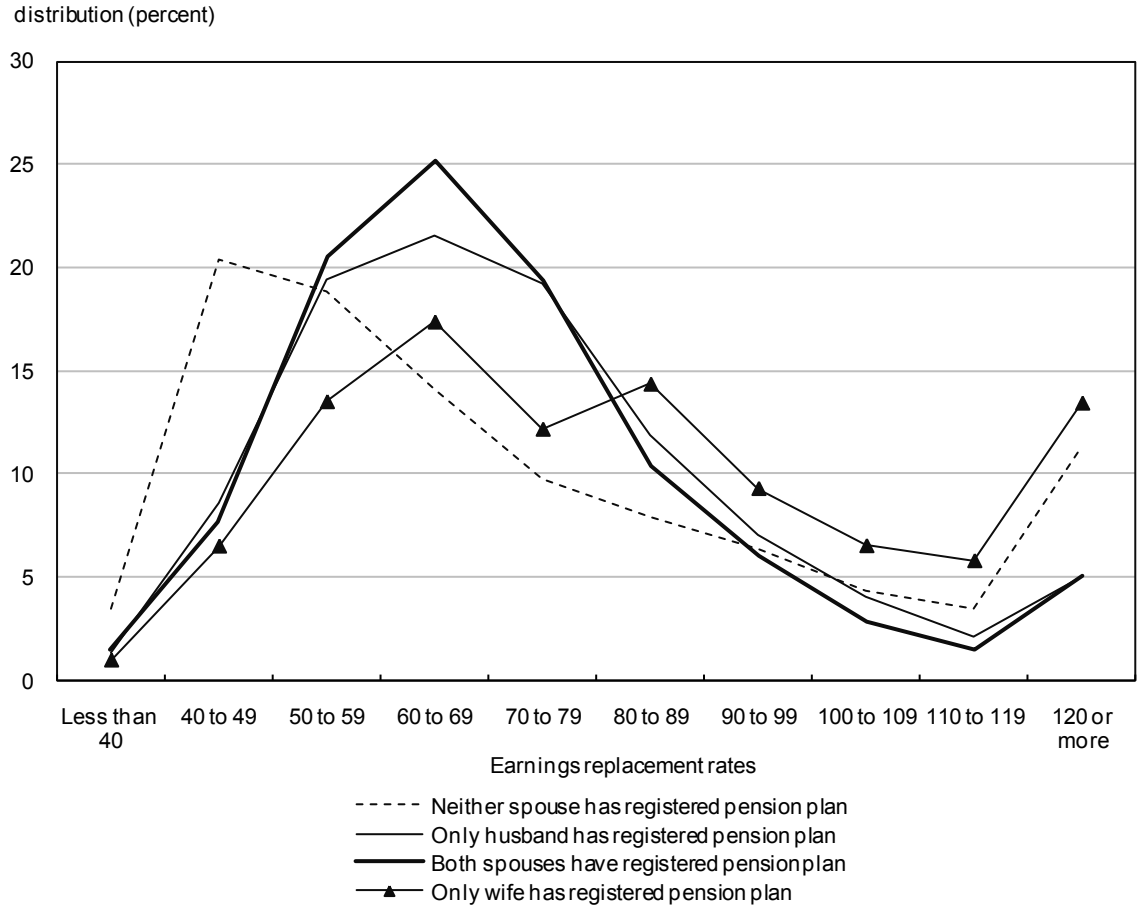


**Chart 7**
**Retired couples from Quintile 4: Distribution of earnings replacement rates in 2006**

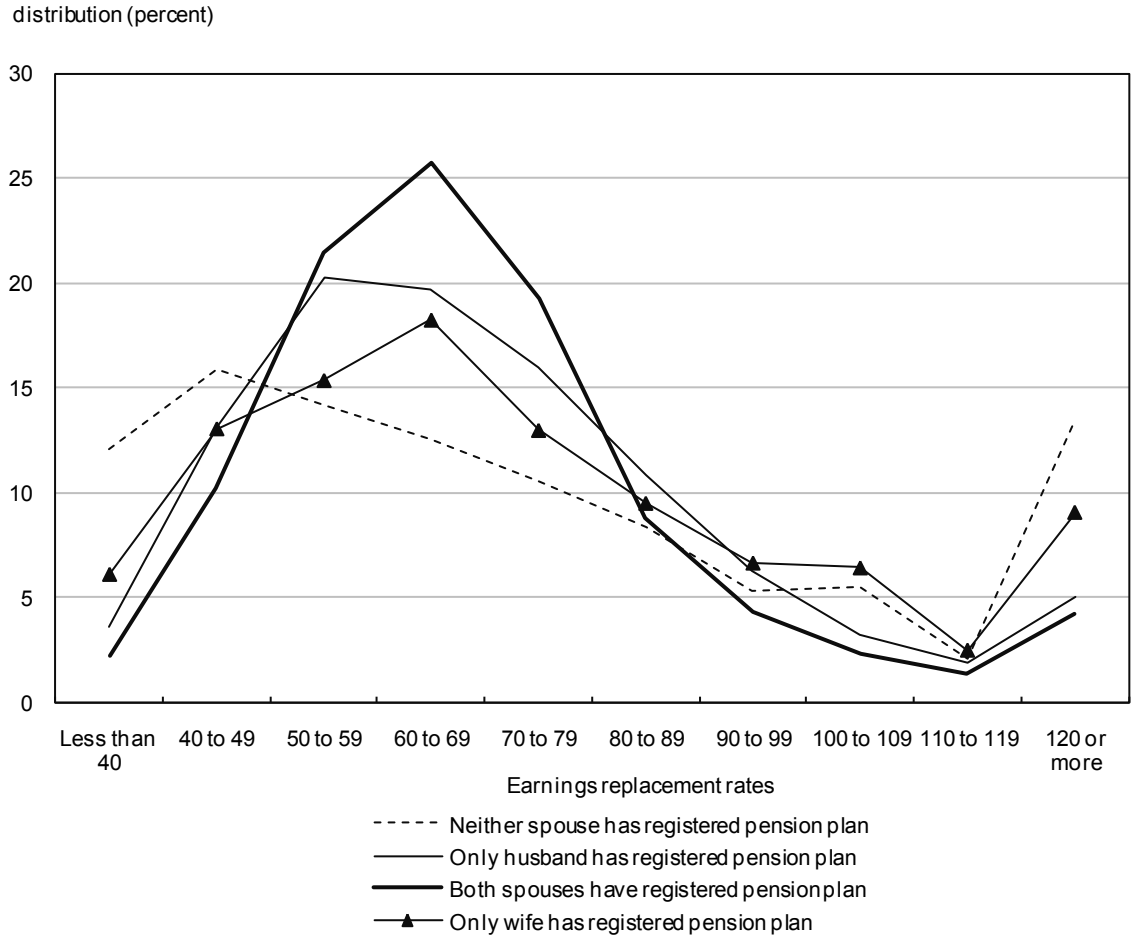
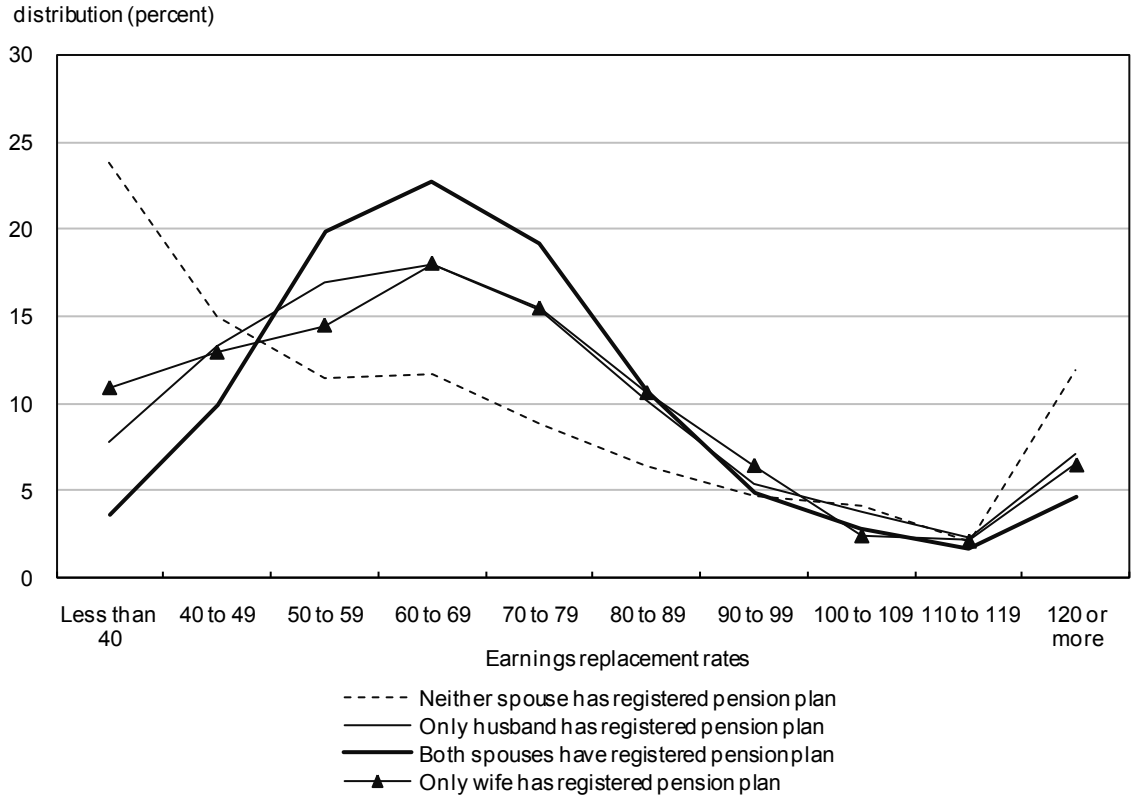


**Chart 8**
**Retired couples from Quintile 5: Distribution of earnings replacement rates in 2006**




Summary measures showing the proportions of retired couples with earnings replacement rates below and above selected thresholds are shown in Table 3. In Q2 and Q3, less than 5% of no-pension couples have earnings replacement rates below 40%. Instead, their over-representation at the lower end of the distribution is largely concentrated in the 40% to 59% range. This is also the case in Q4. Overall, among retired couples in Q2 to Q4, the share of no-pension couples with earnings replacement rates below 50% is about four to fourteen percentage points larger than the share of husband-only pension couples, and the share of no-pension couples with earnings replacement rates below 60% is five to fourteen percentage points larger. At the upper end of the distribution, the share of no-pension couples with earnings replacement rates of 100% or more is seven to eleven percentage points larger than the share of husband-only pension couples. In this respect, the distribution of earnings replacement rates among retired couples with no pensions is more diverse than is the case among retired couples with pensions. This is the same pattern that Ostrovsky and Schellenberg (forthcoming 2010) document among retired men.

Briefly considering retired couples from Q5, we find that those with no pension coverage are more likely to have earnings replacement rates below 40% than those with pension coverage. The relatively high average earnings of no-pension couples in 1989-1991 are a factor underlying this difference.[15]

15. Average annual earnings in 1989-1991 are about $20,000 to $25,000 higher among retired couples with no pensions than they are among those with pensions. This results in a larger denominator in the replacement rate calculation.

**Table 3**
**Retired couples with earnings replacement rates below selected thresholds in 2006, by pension coverage and 1989 to 1991 earnings quintiles**

| Earnings replacement rates | Neither spouse has registered pension plan | Only husband has registered pension plan | Both spouses have registered pension plan | Only wife has registered pension plan |
|---|---|---|---|---|
| | | percentage | | |
| **Quintile 2** | | | | |
| Less than 40 | 2 | 1 | 1 | 1 |
| Less than 50 | 6 | 2 | 1 | 2 |
| Less than 60 | 22 | 12 | 7 | 9 |
| More than 100 | 26 | 19 | 29 | 39 |
| **Quintile 3** | | | | |
| Less than 40 | 4 | 1 | 1 | 1 |
| Less than 50 | 24 | 10 | 9 | 7 |
| Less than 60 | 43 | 29 | 30 | 21 |
| More than 100 | 19 | 11 | 9 | 26 |
| **Quintile 4** | | | | |
| Less than 40 | 12 | 4 | 2 | 6 |
| Less than 50 | 28 | 17 | 12 | 19 |
| Less than 60 | 42 | 37 | 34 | 35 |
| More than 100 | 21 | 10 | 8 | 18 |
| **Quintile 5** | | | | |
| Less than 40 | 24 | 8 | 4 | 11 |
| Less than 50 | 39 | 21 | 14 | 24 |
| Less than 60 | 50 | 38 | 33 | 38 |
| More than 100 | 18 | 13 | 9 | 11 |

# 6 Conclusions

Overall, this analysis focuses on a sample of couples that were intact over a consecutive period of at least 18 years, including the period from 1989 to 2006. The husbands in these couples were aged 70 to 72 in 2006.

Couples without pensions are less likely to be retired in a given year than couples with pensions, although the magnitude of this difference depends on which groups are used in the comparison. Among couples without pensions, those from the top of the 1989-1991 earnings distribution (i.e., Q5) are far more likely to continue working until older ages than those from the bottom (i.e., Q1).

Among retired couples, the majority from the bottom of the 1989-1991 earnings distribution (i.e., Q1) have earnings replacement rates above 1.00 in 2006. More broadly, just over 85% of them have earnings replacement rates of 0.80 or more, with virtually no difference in this respect between no-pension couples and husband-only pension couples. Mean and median replacement rates exceed 1.00 in most cases.

Among retired couples from the middle of the earnings distribution (i.e., Q2, Q3, and Q4), the earnings replacement rates of those without pensions are more widely dispersed than those of couples with pensions. Larger shares of retired couples without pensions than with pensions have earnings replacement rates below 0.60, with the magnitude of this difference ranging from about ten to fifteen percentage points in Q2 and Q3, and from five to eight percentage points in Q4. However, couples without pensions are also more likely than couples with pensions to have earnings replacement rates of 1.00 or more, with the difference ranging from about seven to

thirteen percentage points in Q2, Q3, and Q4. As a result of the asymmetric distribution of replacement rates among no-pension couples, measures of central tendency yield different results. The **average** earnings replacement rates of retired no-pension couples from Q2 to Q4 are generally six to twelve percentage points **higher** than the average earnings replacement rates of retired couples with pensions.[16] Conversely, the **median** earnings replacement rate of retired no-pension couples is about four to six percentage points lower than the median earnings replacement rate of retired couples with pensions.

These findings are consistent with the patterns observed among retired men with different pension characteristics (Ostrovsky and Schellenberg forthcoming 2010). Among retired men aged 70 to 72 in 2006, those without pensions are more likely than those with pensions to have earnings replacement rates below various thresholds (e.g., 0.40 or 0.50), but also more likely to have earnings replacement rates above 1.00. Again, the replacement rate outcomes of men without pensions are more widely dispersed than they are among men with pensions. And while there is generally little difference in the average earnings replacement rates of men with pensions and men without pensions, the median rate is about seven to ten percentage points lower among those without coverage.[17] The magnitude of the difference in the median rates among couples—at four to six percentage points—is somewhat smaller.

The limitations of this study warrant note. First, the analysis is based on descriptive statistics, and no steps are taken to control for differences in the outcomes of couples that may be attributable to their socio-economic characteristics, such as immigration status, age of wife, or years since retirement. If, and how, the results might change with the inclusion of such variables cannot be determined *a priori*.

Second, the analysis does not take into account the decline in family size experienced by couples over the reference period—a decline of 0.6 persons, on average, between 1991 and 2006. The **relative** outcomes experienced by couples in which one spouse has pension coverage or both spouses have pension coverage, and couples without pension coverage, would not change if family size were taken into account, since the average decline was the same across pension categories. However, if standard methods were used to adjust for family size, the **absolute** earnings replacement rates achieved by couples would be higher.[18]

Third, the analysis does not take into account financial well-being derived from non-income generating assets, most notably home ownership. Schellenberg and Ostrovsky (2010) found that, even when one takes household income into account, retirees who own their home mortgage-free are more likely to have favourable assessments of their financial situation than retirees who do not. Information on wealth is not available on the LAD and remains a critical gap in retirement information.

Finally, wives in this analysis were, on average, three to five years younger than their husbands. These husbands were, by definition, aged 70 to 72 in 2006. Consequently, wives in the sample had not yet reached the age at which conversion of RRSP assets into an income stream was mandatory. If, and how, this might alter the financial outcomes observed cannot be said.

16. Again, couples in which the only the husband has an RPP or in which both spouses have RPPs are the primary point of comparison throughout this discussion.
17. These results pertain to retired men from the middle of the 1989-1991 earnings distribution (i.e., Q2, Q3 and Q4). The difference in median earnings replacement rates among men from Q5 is ten percentage points.
18. A commonly accepted method to take into account the number of persons residing in the household is to divide earnings and income figures by the square root of family size. Assuming that decline in family size is the same for retired couples as it is for all couples in the sample, such an adjustment would increase earnings replacement rates by 14%, on average.

# Appendix

## Table 1
## Retired couples: Distribution of earnings replacement rates in 2006, by pension coverage and 1989 to 1991 earnings quintile

| Earnings replacement rates | Neither spouse has registered pension plan | Only husband has registered pension plan | Both spouses have registered pension plan | Only wife has registered pension plan |
|---|---|---|---|---|
| | | percentage | | |
| **Quintile 1** | | | | |
| Less than 40 | 0.4 | 0.2 | 0.0 | 0.4 |
| 40 to 49 | 0.4 | 0.2 | 0.0 | 0.0 |
| 50 to 59 | 1.0 | 0.9 | 0.0 | 0.1 |
| 60 to 69 | 2.7 | 2.9 | 3.0 | 1.3 |
| 70 to 79 | 7.6 | 10.0 | 13.0 | 5.3 |
| 80 to 89 | 9.5 | 17.3 | 7.0 | 9.7 |
| 90 to 99 | 8.3 | 15.9 | 0.0 | 8.4 |
| 100 to 109 | 7.4 | 13.4 | 10.9 | 8.2 |
| 110 to 119 | 6.8 | 7.5 | 20.9 | 7.5 |
| 120 or more | 56.0 | 31.6 | 45.2 | 59.2 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| **Quintile 2** | | | | |
| Less than 40 | 1.5 | 0.5 | 0.6 | 0.9 |
| 40 to 49 | 4.0 | 1.4 | 0.8 | 0.9 |
| 50 to 59 | 16.9 | 9.9 | 6.1 | 7.1 |
| 60 to 69 | 22.0 | 20.8 | 15.9 | 12.3 |
| 70 to 79 | 14.4 | 21.8 | 27.0 | 15.8 |
| 80 to 89 | 8.6 | 15.9 | 11.8 | 13.4 |
| 90 to 99 | 6.2 | 10.6 | 9.1 | 10.8 |
| 100 to 109 | 5.1 | 6.2 | 8.8 | 8.9 |
| 110 to 119 | 4.2 | 3.8 | 5.3 | 6.4 |
| 120 or more | 17.1 | 8.9 | 14.6 | 23.3 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| **Quintile 3** | | | | |
| Less than 40 | 3.5 | 1.3 | 1.4 | 1.0 |
| 40 to 49 | 20.4 | 8.6 | 7.7 | 6.5 |
| 50 to 59 | 18.9 | 19.4 | 20.6 | 13.5 |
| 60 to 69 | 14.1 | 21.5 | 25.2 | 17.4 |
| 70 to 79 | 9.8 | 19.2 | 19.4 | 12.2 |
| 80 to 89 | 7.9 | 11.9 | 10.4 | 14.4 |
| 90 to 99 | 6.4 | 7.0 | 6.1 | 9.3 |
| 100 to 109 | 4.4 | 4.0 | 2.9 | 6.5 |
| 110 to 119 | 3.4 | 2.1 | 1.4 | 5.8 |
| 120 or more | 11.3 | 5.0 | 5.1 | 13.5 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| **Quintile 4** | | | | |
| Less than 40 | 12.0 | 3.6 | 2.2 | 6.1 |
| 40 to 49 | 15.9 | 13.1 | 10.2 | 13.1 |
| 50 to 59 | 14.2 | 20.3 | 21.5 | 15.4 |
| 60 to 69 | 12.6 | 19.7 | 25.8 | 18.3 |
| 70 to 79 | 10.6 | 16.0 | 19.3 | 13.0 |
| 80 to 89 | 8.4 | 10.8 | 8.8 | 9.5 |
| 90 to 99 | 5.3 | 6.3 | 4.3 | 6.7 |
| 100 to 109 | 5.5 | 3.2 | 2.4 | 6.4 |
| 110 to 119 | 2.0 | 1.9 | 1.3 | 2.5 |
| 120 or more | 13.5 | 5.1 | 4.2 | 9.1 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| **Quintile 5** | | | | |
| Less than 40 | 23.9 | 7.8 | 3.6 | 10.9 |
| 40 to 49 | 15.0 | 13.3 | 9.9 | 12.9 |
| 50 to 59 | 11.4 | 16.9 | 19.9 | 14.5 |
| 60 to 69 | 11.6 | 18.0 | 22.8 | 18.0 |
| 70 to 79 | 8.8 | 15.3 | 19.2 | 15.5 |
| 80 to 89 | 6.4 | 10.2 | 10.8 | 10.6 |
| 90 to 99 | 4.7 | 5.4 | 4.8 | 6.5 |
| 100 to 109 | 4.1 | 3.7 | 2.8 | 2.4 |
| 110 to 119 | 2.0 | 2.3 | 1.6 | 2.1 |
| 120 or more | 11.9 | 7.1 | 4.6 | 6.5 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |

**Chart 1**
**Couples from Quintile 1: Percent retired, by pension coverage**

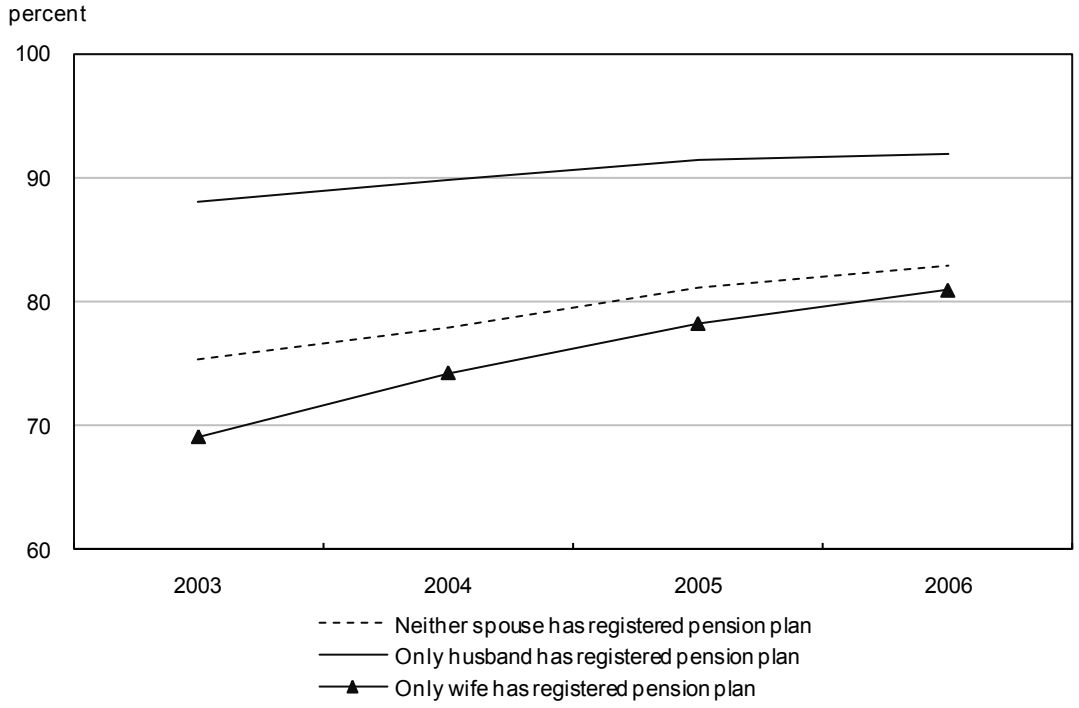



**Chart 2**
**Couples from Quintile 2: Percent retired, by pension coverage**

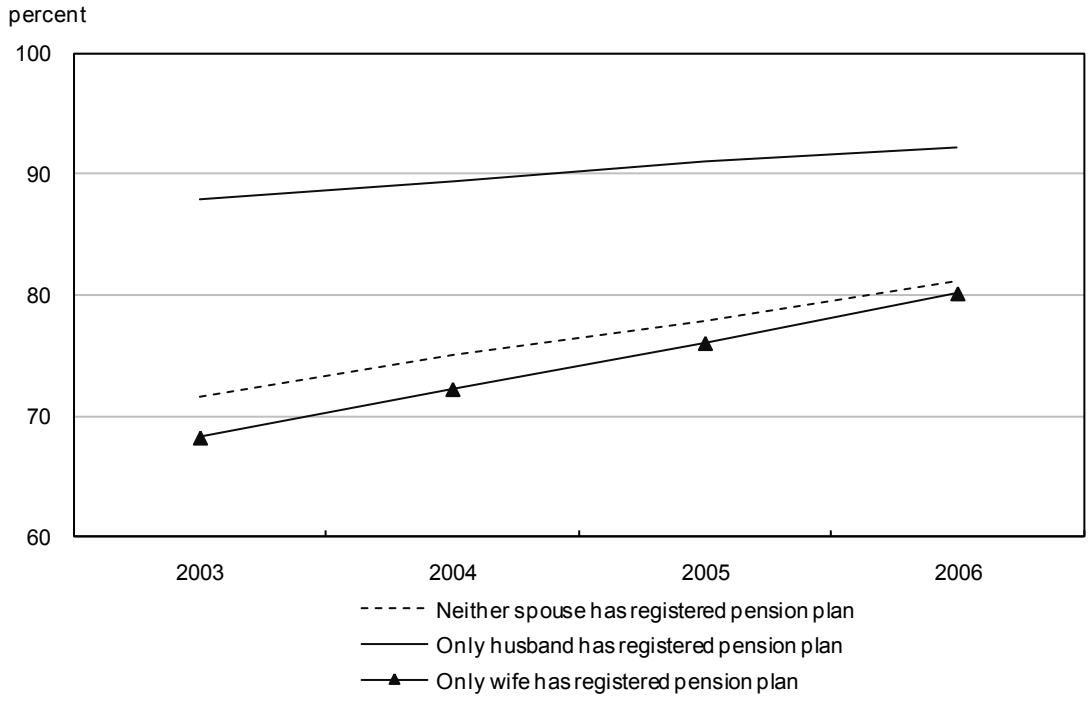


**Chart 3**
**Couples from Quintile 3: Percent retired, by pension coverage**

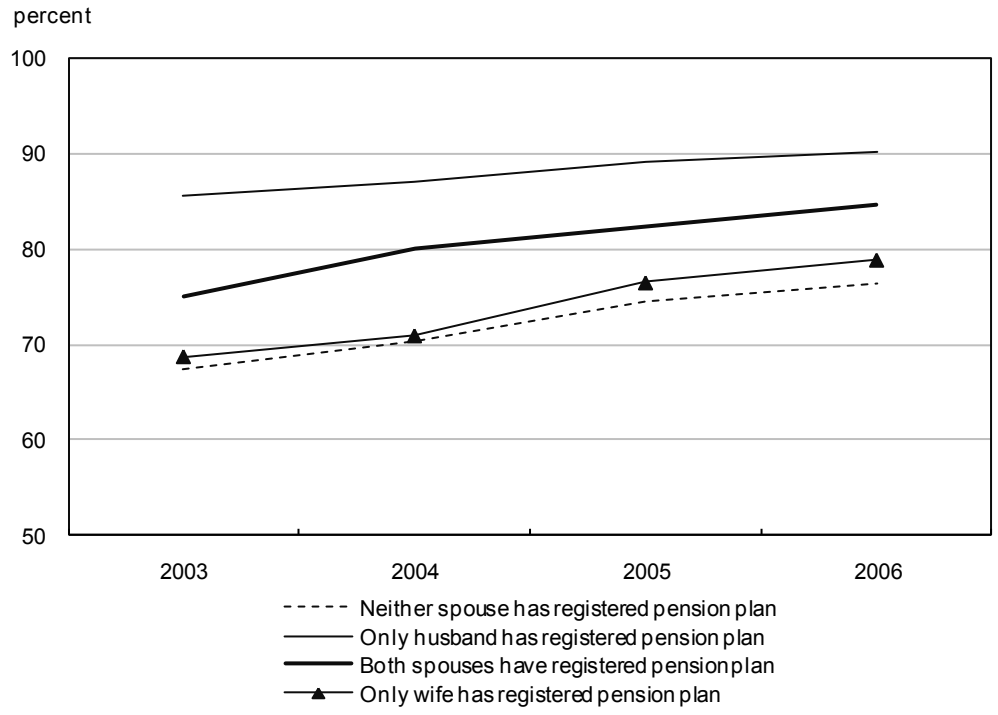



**Chart 4**
**Couples from Quintile 4: Percent retired, by pension coverage**

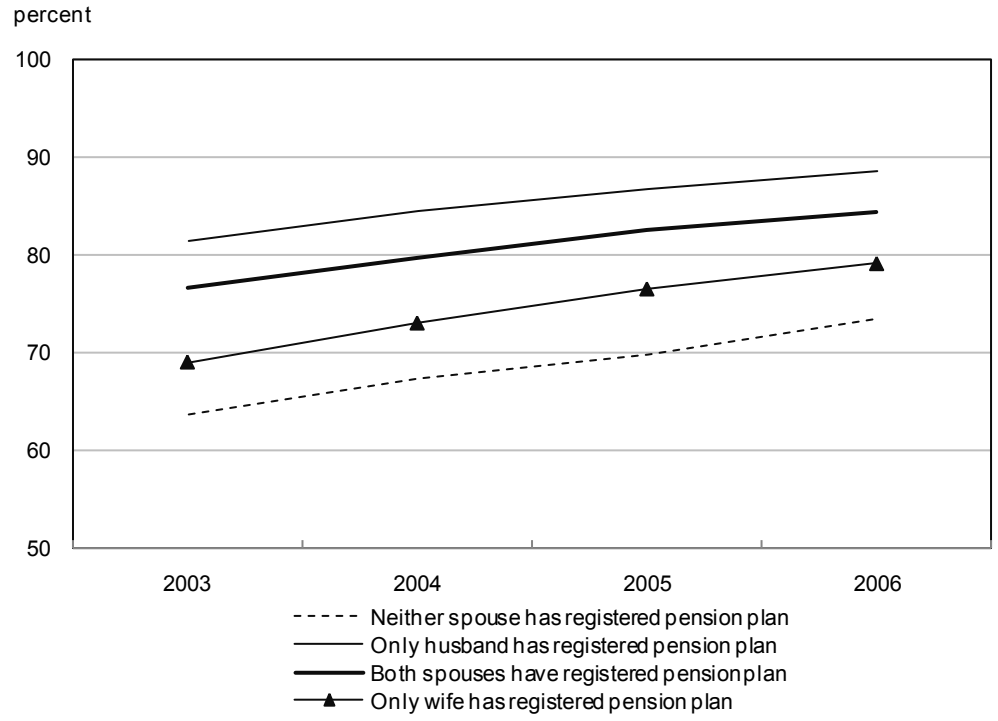


**Chart 5**
**Couples from Quintile 5: Percent retired, by pension coverage**

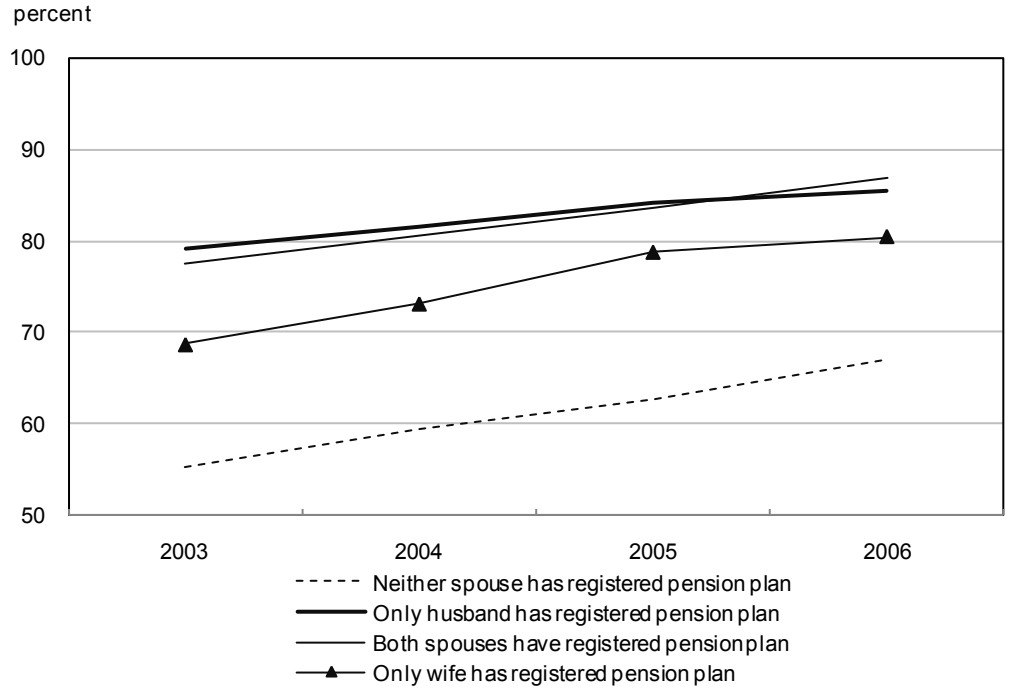



**Chart 6**
**Retired couples from Quintile 2: Mean earnings replacement rates, 2003 to 2006**

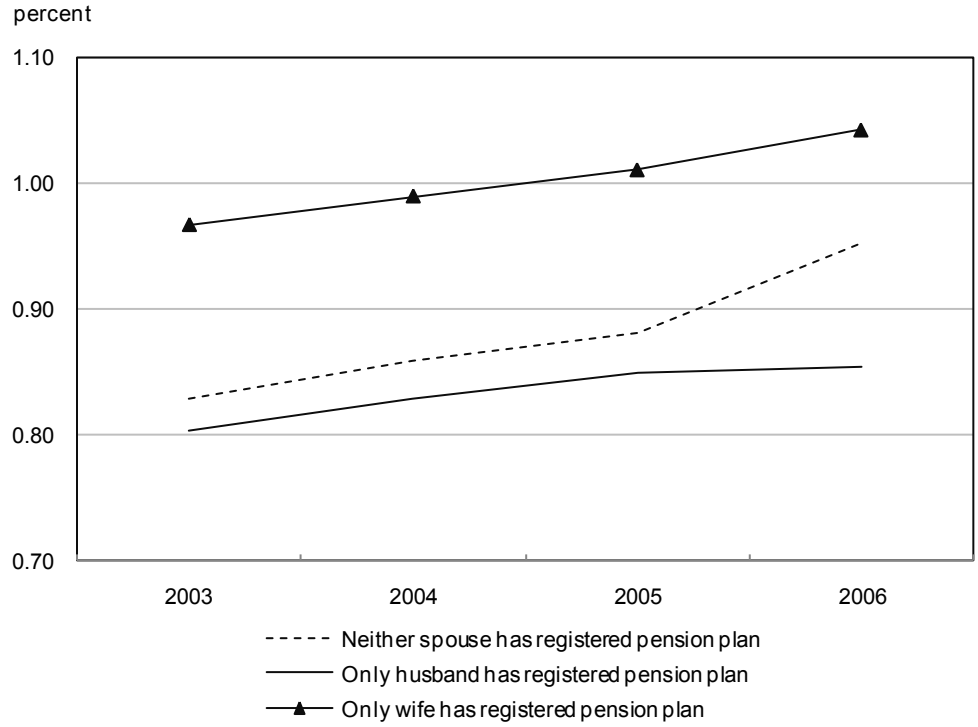


**Chart 7**
**Retired couples from Quintile 3: Mean earnings replacement rates, 2003 to 2006**

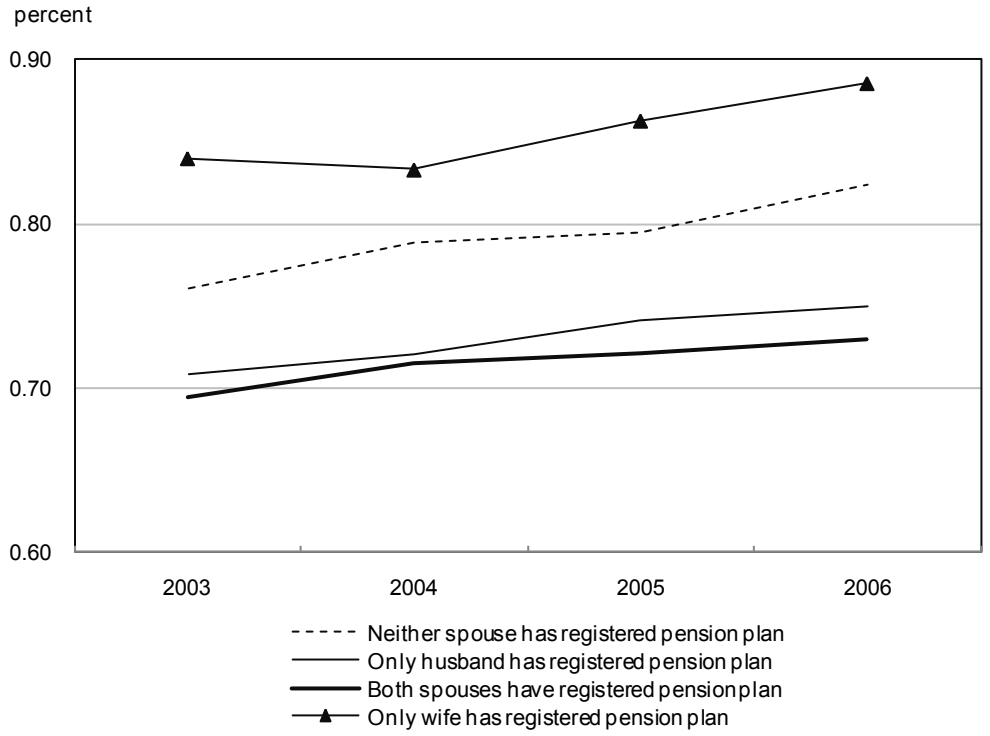



**Chart 8**
**Retired couples from Quintile 4: Mean earnings replacement rates, 2003 to 2006**

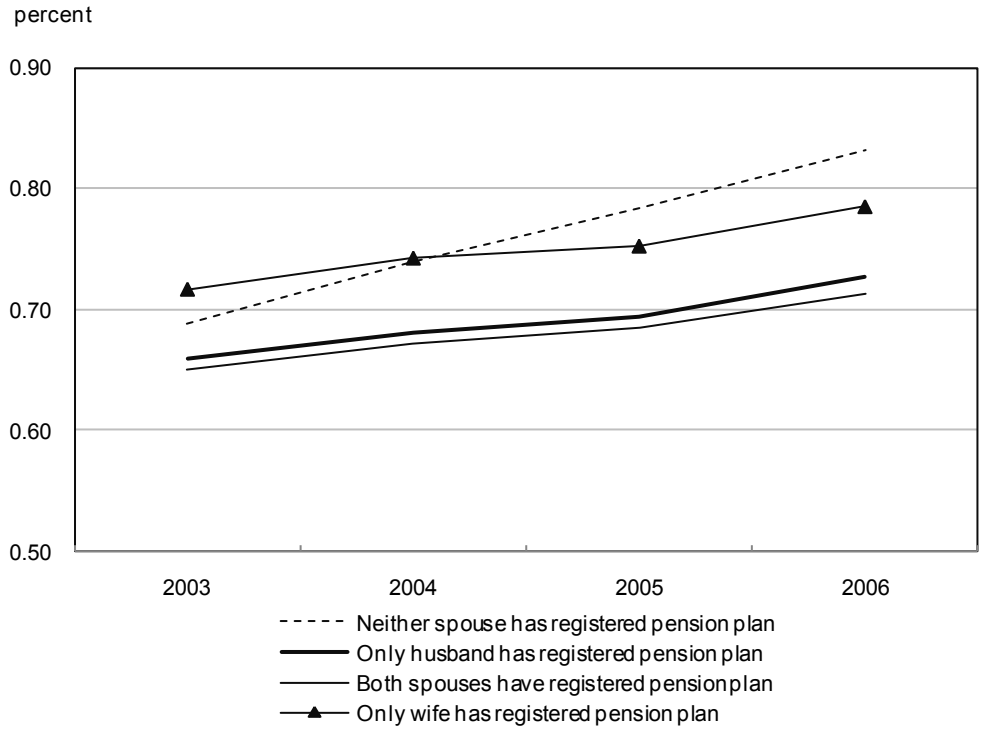


**Chart 9**
**Retired couples from Quintile 5: Mean earnings replacement rates, 2003 to 2006**

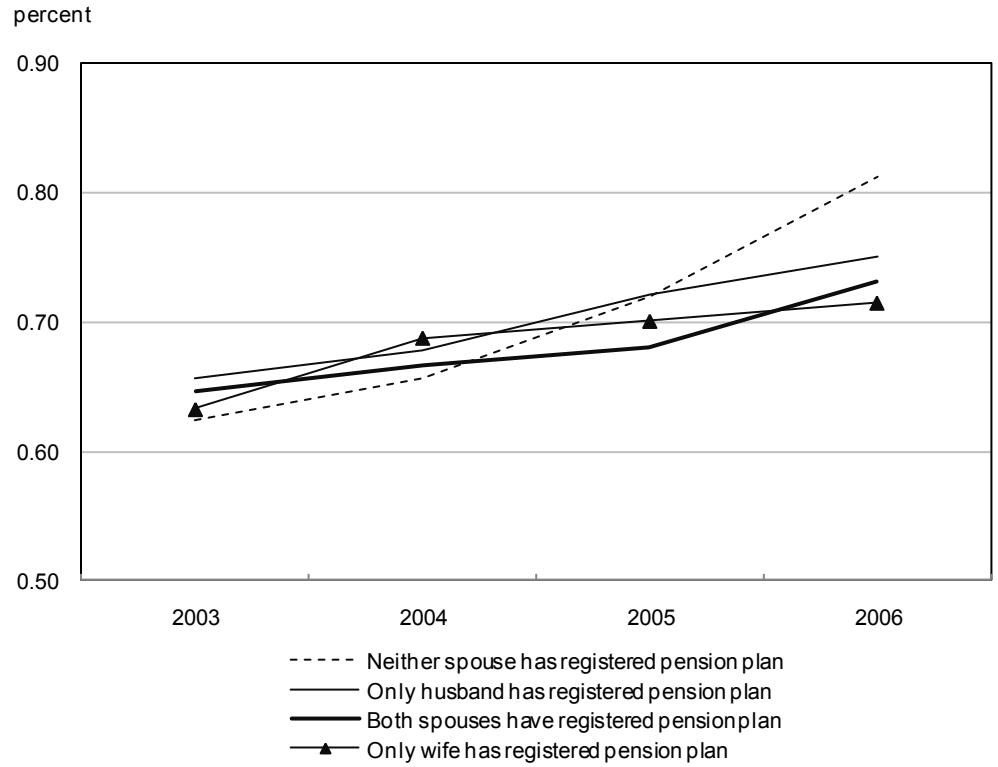



**Chart 10**
**Retired couples from Quintile 2: Median earnings replacement rates, 2003 to 2006**

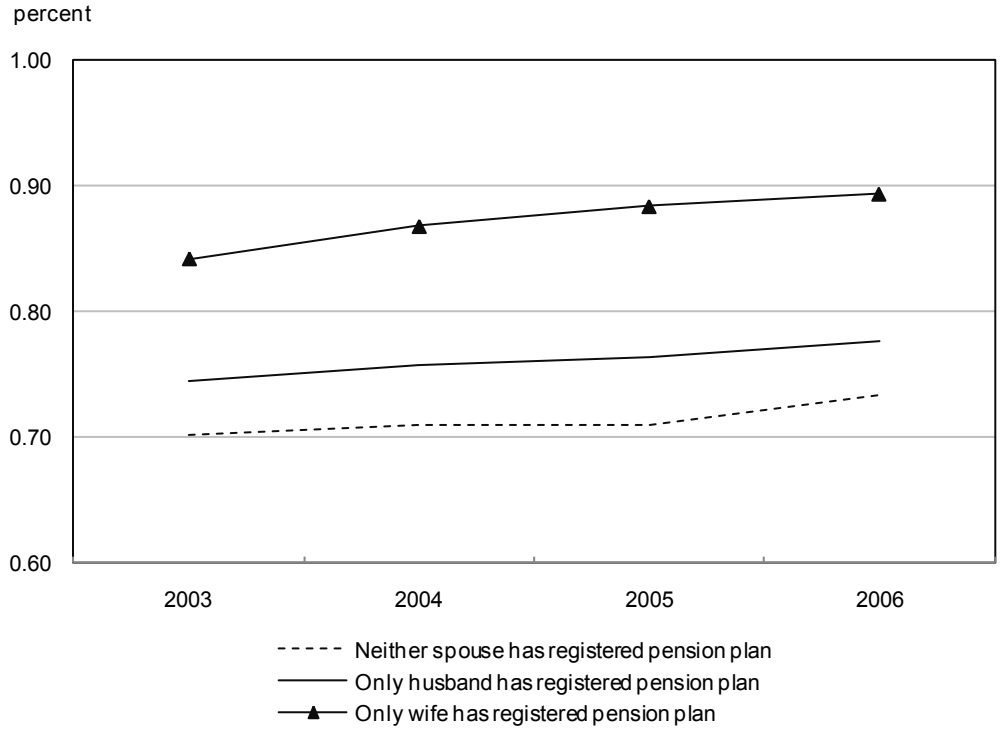


**Chart 11**
**Retired couples from Quintile 3: Median earnings replacement rates, 2003 to 2006**

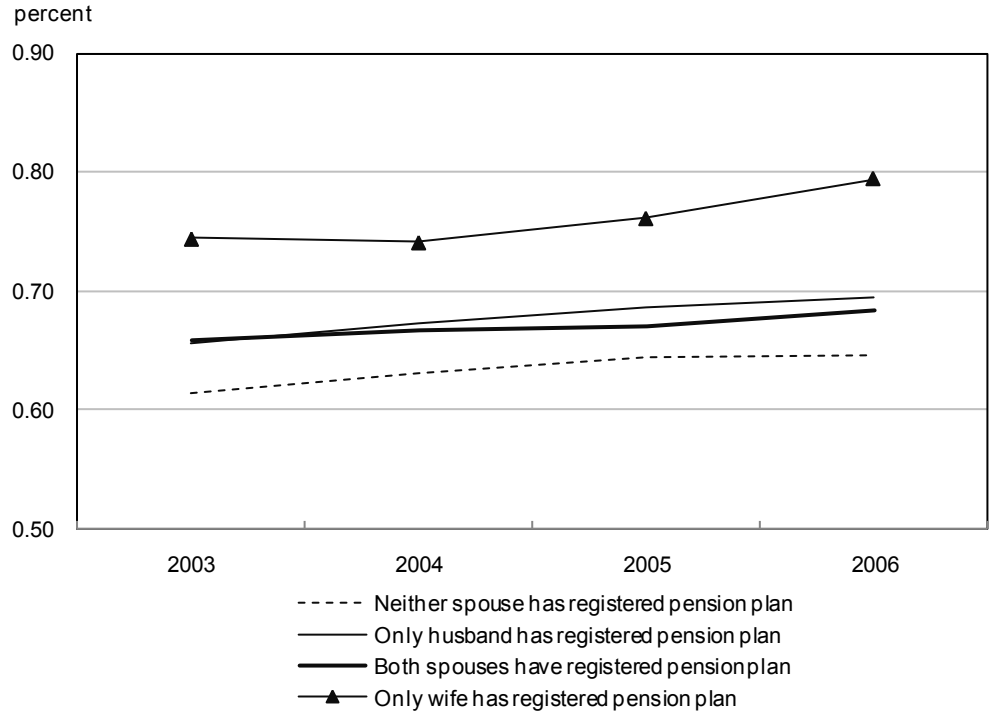



**Chart 12**
**Retired couples from Quintile 4: Median earnings replacement rates, 2003 to 2006**

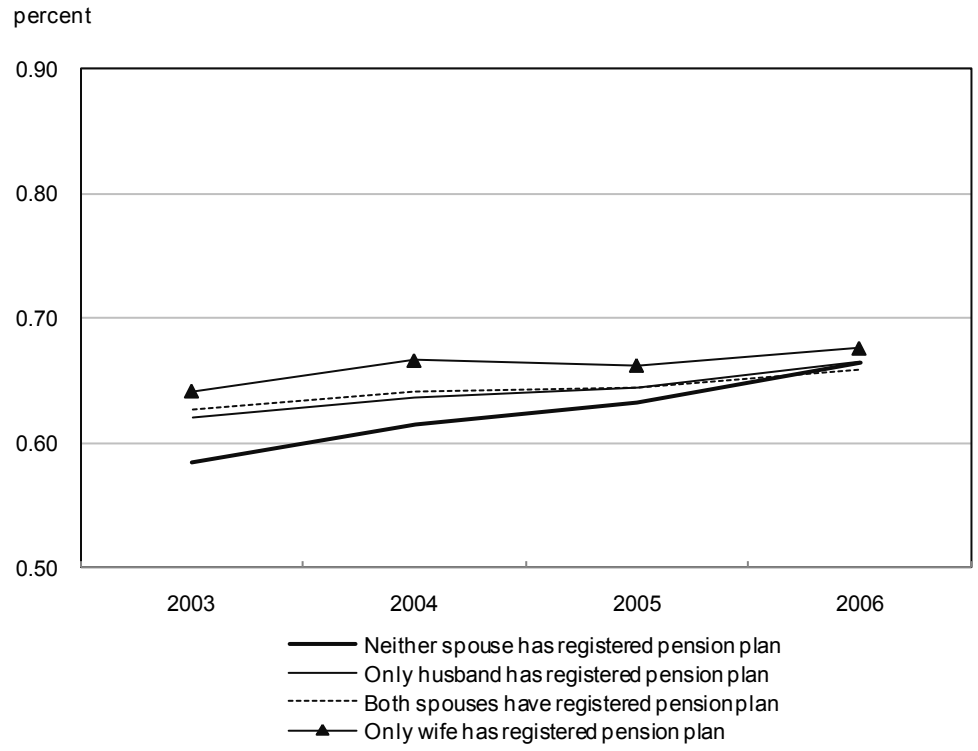
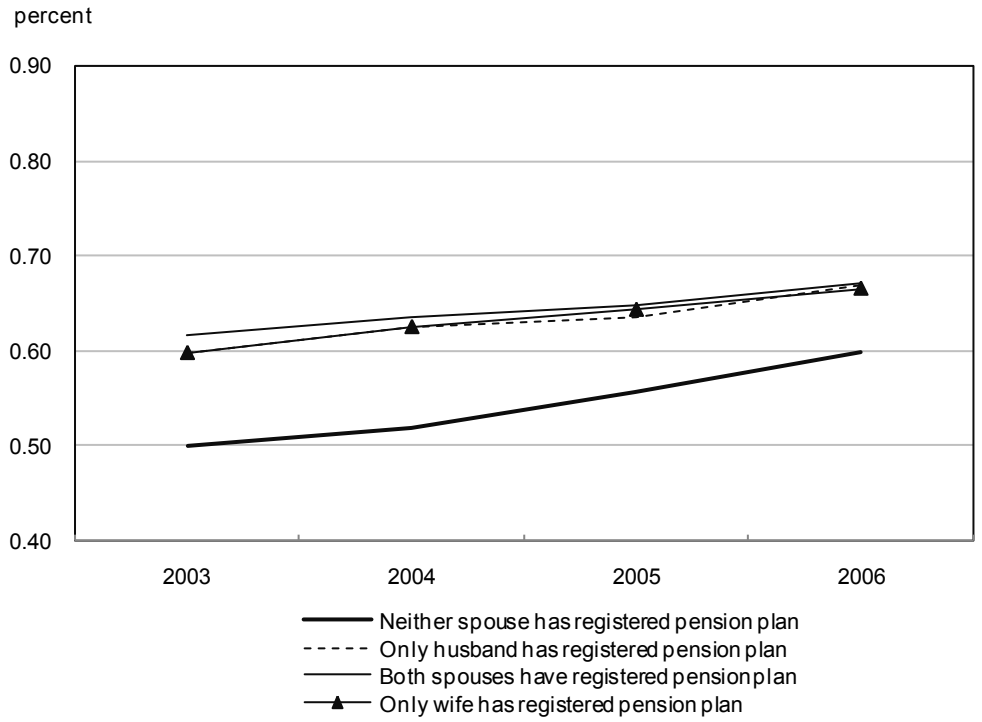


**Chart 13**
**Retired couples from Quintile 5: Median earnings replacement rates, 2003 to 2006**



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