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Disability Insurance Programs in Canada

Michael Baker and Kevin Milligan

9.1 Introduction

Disability insurance is now an important labor and health program in many countries. This development stems from a number of factors: changing attitudes about the nature of disability (such as the treatment of mental health); broad trends in the labor market; deliberate acts of policy. This latter factor includes not only direct changes to the eligibility or benefit rules of disability insurance programs, but also by changes to other programs (such as early retirement provisions in public pensions, unemployment insurance, or welfare) that might be substitute sources of income for those whose health is fading. As countries grapple with increasing stress on their retirement systems, the need for coordination between reforms of these programs and disability insurance programs is clear.

In this chapter, we begin an examination of the impact of disability insurance on elderly Canadians. To do so, we pursue an analysis of the long-run trends in Canada Pension Plan Disability Insurance participation. We relate these trends to observed changes in different measures of health and an institutional analysis of policy changes in order to understand what is driving the changes in disability insurance receipt through time.

The results provide clear evidence that changes in program rules have a

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large impact on receipt of disability insurance. By lining up the observed long-run trends with the timing of institutional changes, these relationships are uncovered. In contrast, the long-run trends in the measures of health that we are able to observe do not appear to have a strong relationship with the trends in disability insurance participation.

We begin our investigation by describing the development of the Canada Pension Plan Disability Insurance program (and its sister program in the province of Quebec). We then review existing evidence on disability insurance in Canada. Next, we describe the data sources available to us for the analysis and then proceed to graph the time series and some cross-section patterns of health and program participation. We close with some thoughts on interpretation of the evidence.

9.2 Development of Disability Insurance in Canada

Until 1970, public long-term disability insurance was provided by provinces through Workers' Compensation programs that covered employment-related accidents and disability claims. Private insurance supplemented these programs. As a backstop, the disabled might resort to provincial social assistance (welfare) programs. There was also some short-term sickness insurance available through the federal Unemployment Insurance program.¹

The disability insurance landscape changed dramatically with the introduction of the Disability Insurance component of the Canada Pension Plan (CPP). The Canada Pension Plan passed into law in 1966 and comprised both a retirement benefits and disability benefits components. The Canada Pension Plan covered Canadians in nine provinces and the northern territories. The province of Quebec opted out of this initiative, instead setting up a sister program—the Quebec Pension Plan. The Canada Pension Plan is administered by the federal government, but it operates with the approval of the provinces. Changes must be supported by two-thirds of the “included” provinces with two-thirds of the total “included” population.

The disability insurance component of the Canada Pension Plan began paying benefits in 1970. Entitlement depends on the finding of a disability that is “severe” and “prolonged”.² Note that, unlike Workers' Compensation, the source of the disability does not matter. In addition to the disability test, there is a requirement for attachment to the workforce. To be eligible, an individual must have contributed to the program either in four

1. See Campolieti and Lavis (2000) for some details on the roles of each of these programs, and Canada Pension Plan Disability Insurance, from 1970 to 1996. A history of the Disability Insurance component of the Canada Pension Plan is provided by Torjman (2002) and Prince (2002). Our discussion here draws on these sources.

2. According to the Canada Pension Plan Act section 42(2), “severe” is defined as being “incapable regularly of pursuing any substantial gainful occupation,” and “prolonged” means “likely to be long continued and of indefinite duration or is likely to result in death.”

of the previous six years, or three out of the previous six years if he or she has made contributions to the CPP for twenty-five years or more. Workers' Compensation programs continued to insure workplace accidents after the introduction of the Canada Pension Plan but were residual insurers—that is, Canada Pension Plan payments were subtracted from any Workers' Compensation entitlements.

Benefits under the Canada Pension Plan Disability Insurance program are comprised of three parts. First is a fixed amount—currently \$426.13 per month.³ To this is added an earnings-related component. Earnings only up to a cap (set at approximately the economywide average earnings level) in each year of the earnings history are considered, with provisions for discarding low-earning months in the calculation. The base replacement rate amounts to 18.75 percent of average capped earnings. This reaches a current maximum of \$700.63.⁴ Finally, the third component affects those with children under the age of eighteen, with a fixed monthly payment of \$214.85. The average total payment made in July 2010 was \$809.54 per month. At age sixty-five, benefits are transformed into retirement benefits.

The parallel Quebec Pension Plan Disability Insurance program is administered separately, but the program parameters are very similar.⁵ There have been important differences between the Canada and Quebec Pension Plans through time in the definition of disability and how it is implemented.

9.2.1 Reforms through the 1980s, 1990s, and 2000s

Several changes occurred to the program starting in the middle of the 1980s. These changes are important for understanding the times series trends we uncover in the data. We describe these developments in the following.

In 1987, the Canada Pension Plan Disability Insurance was reformed to increase the flat benefit to match the rate in the Quebec Pension Plan. Along with this change, eligibility was made easier, now requiring only work in two of three last years rather than five of the last ten. Finally, the ability to make claims retroactively was enhanced at this time. In general, this 1987 reform made the program more generous.

A further reform in 1989 came in the form of an administrative policy guideline that instituted consideration of factors such as the local unemploy-

3. This amount is for the October to December quarter of 2010. It is in 2010 Canadian dollars. One Canadian dollar is worth 98 US cents in October 2010.

4. The cap is called the "Year's Maximum Pensionable Earnings." For 2010, it is set at \$47,200.

5. The Quebec Pension Plan (QPP) requires that the disability be "permanent" and "severe," which means that an individual is unable to work enough to earn more than an earnings threshold that was \$13,521 in 2009. Applicants between the ages of sixty and sixty-four may be eligible if they have had to leave their usual employment as a result of their health and are no longer able to perform their usual work. QPP eligibility requires contributions in two of the previous three years, or five of the previous ten years, or in at least half of the individual's contributory period (two-year minimum), which starts at age eighteen and ends either (a) the month preceding a retirement benefit claim, (b) the month of the seventieth birthday, or (c) the month of death.

ment rate, job skills, and socioeconomic factors in determining eligibility for those aged fifty-five to sixty-four in the Canada Pension Plan. There was also an increase to the flexibility of medical guidelines. Finally, there was a concern that Canadians were not well aware of the benefits available to them, so an information campaign was pursued to make people more aware of the program.

A strong reversal occurred in 1995. The administrative guidelines on socioeconomic considerations were repealed. There was a reassessment of many existing claimants. Also, there was a facilitation of “self-sufficiency,” making it easier to return to work.

In 1998, a major reform of the Canada and Quebec Pension Plan was implemented. On the financing side, the payroll tax to fund the plans was set on a sharply increasing schedule allowing future benefits to be partially prefunded. The benefit formulas were changed slightly as well.⁶ Most relevant to disability insurance, the eligibility requirement was changed to having worked in four of the last six years.

In 2008, a slight change to eligibility led to the current rules. The change only affected those with more than twenty-five years of contributions over their lifetimes. Previous to 2008, one needed to have worked four of the last six years. As of March 3, 2008, however, those with twenty-five years or more of contributions were able to be eligible with work in three of the last six years.

These developments can be seen in figure 9.1. We take the number of Disability Insurance beneficiaries between the ages twenty-five and sixty-four and divide it by the total population in that age range. The source of the data is administrative reports on the Canada Pension Plan, as described in the next section. The participation rate grows steadily and sharply from 1971 to 1987, where a vertical line indicates the timing of the reforms that made Disability Insurance more generous. The growth continues to 1995, indicated by the second vertical line. In 1995, the eligibility criteria were tightened, resulting in a topping out of the growth of program participation at a rate just below 2.5 percent. Since then, the participation rate has settled at a level just over 2 percent and has been quite steady.

9.2.2 Research on Canada and Quebec Pension Plan Disability Insurance

Research on the Canada Pension Plan Disability Insurance program has touched on two topics of relevance for our focus. First, there is a literature examining the impact of disability insurance on the labor supply of older workers. Gruber (2000) exploits differences in the fixed component of the

6. Rather than using the past three years' average value of the Year's Maximum Pensionable Earnings in order to update lifetime earnings to current levels, the new formula used the past five years' average value.

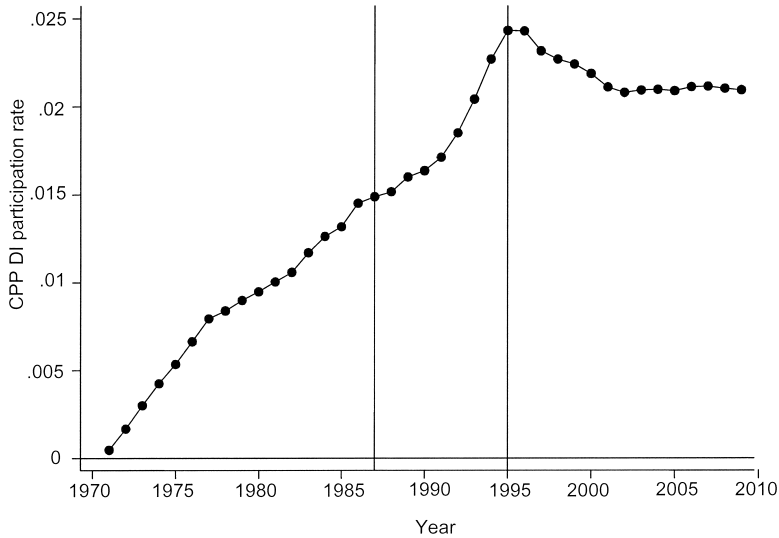


Fig. 9.1 Growth of Canada Pension Plan Disability Insurance participation

Source: Canada Pension Plan Statistical Bulletin.

Notes: Ages twenty-five to sixty-four, both sexes. Number of disability insurance pensions being paid divided by total population in the age range.

benefit formula between the Quebec and Canada Pension Plans in the 1980s, finding sizeable elasticities of work with respect to benefits. Campolieti (2004) performs a similar exercise for an earlier Quebec-Canada differential in the 1970s but finds small effects. He hypothesizes that the very tight screening on disability in place in the 1970s may have decreased the responsiveness to program parameters. Campolieti (2001) also looks at replacement rates, finding large effects both for men and women.

The second strand of the literature of interest here is the impact of administrative rules and medical screening on program participation. Campolieti (2002) again compares Canada and Quebec Pension Plans, finding that the increase in the Canada Pension Plan flat benefit in 1987 led to an increase in hard-to-diagnose soft-tissue and musculoskeletal claims. He also finds that administrative tightening of the screening criteria in the Canada Pension Plan in 1995 decreases claims for disability from soft-tissue and musculoskeletal problems. Campolieti (2006) goes into greater depth on the 1995 reform, finding no evidence that easier-to-diagnose disabilities were affected by the tighter screening.

As a summary of this evidence, it appears that there is substantial scope for substitution between the labor market and disability receipt for older workers. Moreover, eligibility and screening rules can have a large influence on participation as well.

9.3 Data

We pursue our analysis using several survey and some administrative data sources. In total, there are five sources of data that we bring together. Compared to the data available for other countries, Canada lacks panel data on elderly households (such as the Health and Retirement Study-English Longitudinal Study of Ageing-Survey of Health, Ageing and Retirement in Europe [HRS-ELSA-SHARE] data available elsewhere). This limits somewhat the panel dimension to the analysis we can perform.

We begin with administrative data on usage of the Canada Pension Plan Disability Insurance benefits. We draw these data from a monthly publication called the *Canada Pension Plan Statistical Bulletin*. This publication contains comparable tables from 1971 to 2010 that allow us to construct time series of Canada Pension Plan Disability Insurance benefit receipt by sex and five-year age group.

The second administrative data source is for mortality. Mortality data are collected as part of vital statistics separately by each province. Statistics Canada aggregates these into national numbers. We gather deaths and population counts by age, sex, and year using the data available for Canada in the Human Mortality Database.⁷ We combine the death and population data to form age-sex-year mortality rates.

Our survey data start with the Labour Force Survey. Similar to the Current Population Study in the United States, the Labour Force Survey is a monthly survey used for high-frequency information about the state of the labor market. Around 50,000 individuals are in the monthly data. The Labour Force Survey lacks information on program participation and does not have complete information on why respondents are absent from the labor market. It does have excellent information on current labor market status, and we use it for that purpose here.

We also use the Survey of Consumer Finances and the Survey of Labour and Income Dynamics for income information. These surveys span most years from 1971 to 1997 (Survey of Consumer Finances) and 1998 to 2007 (Survey of Labour and Income Dynamics). From this income information, we can derive some measures of program participation. As well, there is a detailed question for the reason someone is not working. These surveys are annual.

The final source of survey data is the General Social Survey. In Canada, the General Social Survey asks a common core of questions each year, along with questions on one from a set of themes. Information on self-assessed health and the types of activity limitation is available sporadically across the time period 1985 to 2006.

For all three of these surveys, we construct age-sex-year samples, using

7. This was collected from <http://www.mortality.org>.

five-year aggregated age groups. We also employ the provided sample weights to ensure representativeness.

9.4 Results

The following results proceed through four steps. The first step is to examine the broad time trends on measures of health and mortality. The second set of results documents the participation in the different government programs that are used by older workers for income. Next, we uncover the relationships between disability and labor market participation. Finally, there are some graphs relating disability and other measures of health.

9.4.1 Mortality and Health

The analysis of mortality and health has two goals. Not only are the time trends interesting here, but we are also interested in how well health and mortality trends correspond. This correspondence is important because mortality is the best measured and most internationally comparable measure of health that we have available. To the extent that mortality and other measures of health are aligned, we can have greater confidence in using mortality trends as general indicators of health.

The first mortality graph presented in figure 9.2 attempts to measure the progress in mortality since 1961. We begin with the mortality rates at age sixty and sixty-five in 1961, separately for males and females. The initial mortality rate in 1961 for males is 2.1 percent at age sixty and 3.2 percent

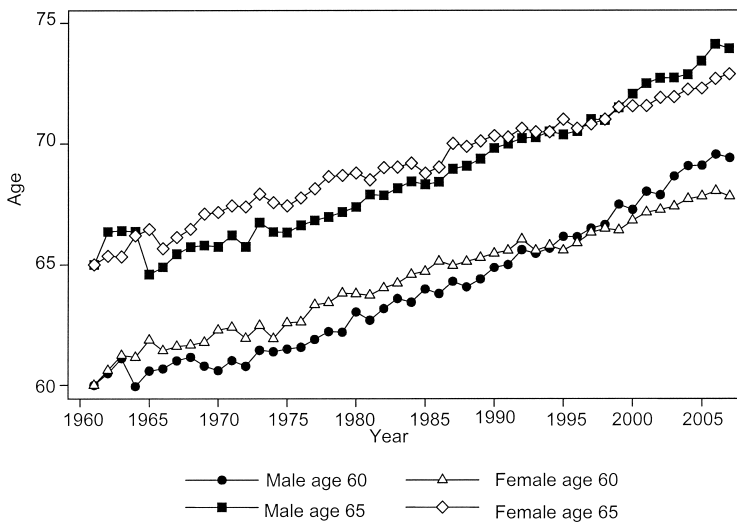


Fig. 9.2 Age at which 1961 aged sixty and sixty-five mortality is reached

Source: Statistics Canada mortality data.

for age sixty-five; for females 1.1 percent at age sixty and 1.8 percent at age sixty-five. The lines in figure 9.2 show the age at which mortality in years after 1961 reaches the age sixty and age sixty-five levels seen in 1961. For example, in 1971 for sixty-five-year-old males, it took until age 66.2 to hit the 3.2 percent mortality rate seen for sixty-five-year-olds in 1961.⁸ That is, it took an extra 1.2 years of age to reach the same mortality rate, so that 66.2 year old males in 1971 are like sixty-five-year-olds in 1961 in terms of mortality.

Mortality improvements were typically very strong starting in the 1970s. The line for women is above the line for men at both ages sixty and sixty-five until the mid-1990s, when improvements for men became sharper. By the end of our data period, there is a remarkable improvement in mortality. The mortality rate seen for sixty-year-old males in 1961 was not reached until age 69.5 in 2007—an increase of almost a decade of life. For women, the increase was slightly less at 67.8. Given the mortality advantage of females, this served to close slightly the gap between male and female mortality. Age sixty-five mortality rates for men and women improved to ages 73.9 for men and 72.9 for women. These developments show a very tangible improvement in mortality over this forty-six-year period.

These same trends can be presented in a different way in figure 9.3. In this graph, we show the cross-sectional mortality rates for the two end-point years in our data, being 1961 and 2007. The drops in the curves for each sex between the two years indicate substantial mortality improvements. For men, the improvement at age sixty is 58 percent; at age seventy is 54 percent; and at age eighty is 42 percent. For females at age sixty the improvement is 54 percent; at age seventy is 50 percent; at age eighty is 54 percent. This suggests a fairly similar improvement at different points in the mortality curve and across sexes.

A third way to visualize these mortality changes is to graph age-specific mortality rates through time. Figures 9.4 and 9.5 do so for men and for women, at ages fifty-five, sixty, and sixty-five. While the magnitude of the drop through time for age sixty-five is larger than for age sixty or age fifty-five, the percentage drop for all three is around 50 percent. Women in figure 9.5 display a similar pattern.

Taken together, this evidence suggests a strong and fairly consistent improvement in mortality rates over the period 1961 to 2007. The gains were of comparable percentage changes across ages and sexes. We next turn

8. We only have mortality by single year of age so the exact age at which the mortality target is reached is determined by linear interpolation. For example, the age sixty-five male target of 3.2 percent mortality sits about 20 percent of the way between the mortality rates seen for ages sixty-six and sixty-seven in 1971, yielding a mortality equivalent age of 66.2. (We perform these operations with several decimal points, but round them to one decimal point here for ease of exposition.)

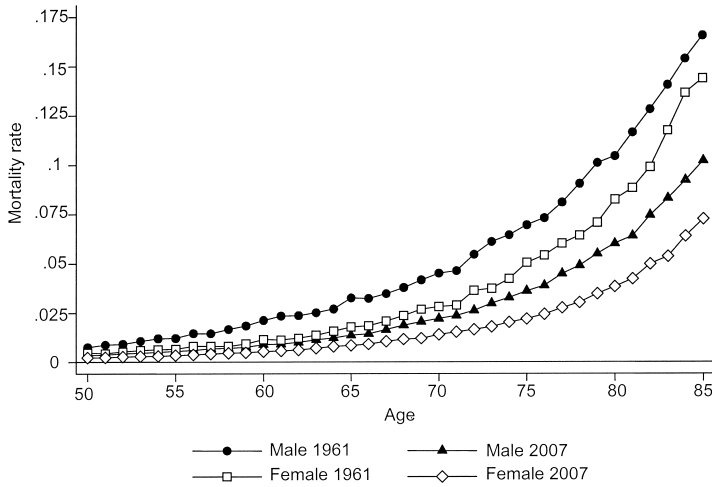


Fig. 9.3 Cross-sectional mortality in 1961 and 2007

Source: Statistics Canada mortality data.

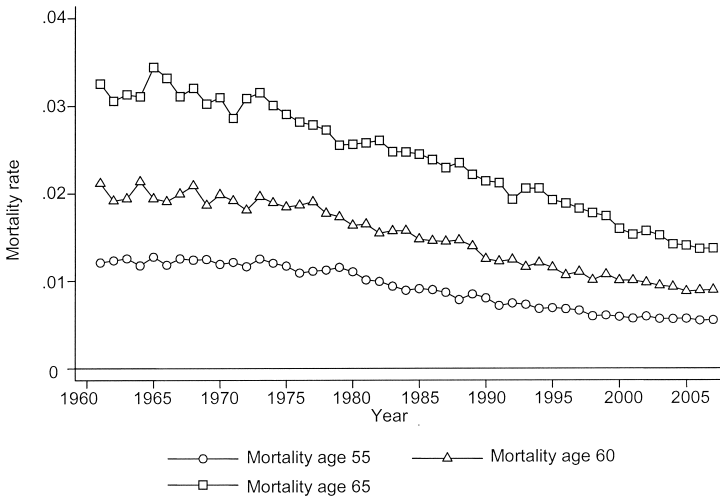


Fig. 9.4 Mortality at specific ages for men

Source: Statistics Canada mortality data.

to an examination of how well these mortality improvements correspond to subtler measures of health.

For the health analysis, we combine three measures of self-assessed health with our previously graphed mortality rates. All three are taken from the General Social Survey. The first year of data available is 1985, with more frequent responses then available after 1990.

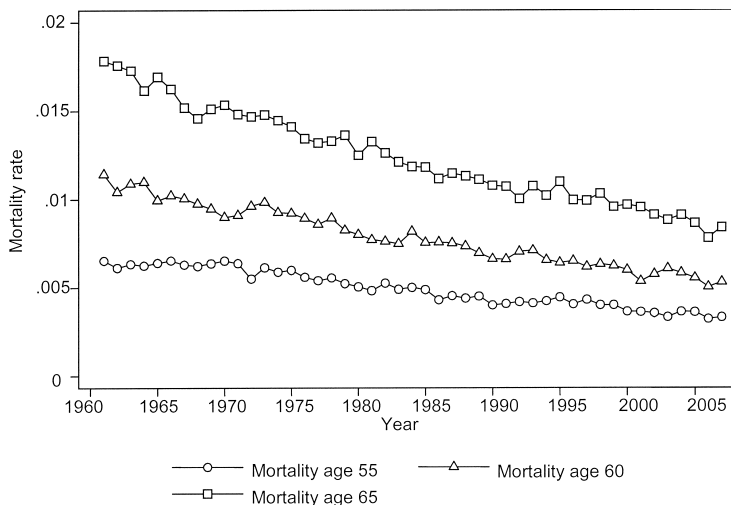


Fig. 9.5 Mortality at specific ages for women

Source: Statistics Canada mortality data.

The first measure we use is from a question on self-assessed health.⁹ We code those responding that their health is “fair” or “poor” as a 1, and those feeling “excellent,” “good,” or “very good” as a 0. In this way, the measure is an indicator of worse health and should go in the same direction through time as mortality if general health improvements are behind the mortality trends. The second measure is based on a question of long-term activity limitation.¹⁰ Those who are limited are coded with a 1; those not limited are coded with a 0. Note that this definition is broader than the employment-based definition used for eligibility for the Canada Pension Plan. The third measure looks at satisfaction with health. It is only available for three years in the sample, but we include it to capture—albeit weakly—any trend in this variable. We code it to 1 if someone expresses that they are “not satisfied” with their health, comprising the categories “very” and “somewhat” unsatisfied.¹¹ Together, these three variables capture more subjective and more subtle elements of health than does mortality.

Figures 9.6 and 9.7 show the evolution of our three subjective health measures compared against mortality, defined as the number of deaths over the population in the given age range. We use only the time period between 1985

9. The specific question is “In general, would you say your health is:” The five possible responses are excellent, very good, good, fair, and poor.

10. The specific question is “Are you limited in the amount or kind of activity you can do at home, at work, or at school because of a long-term physical or mental condition or health problem?”

11. The specific question is “How do you feel about your health?” The allowed answers are very satisfied, somewhat satisfied, somewhat dissatisfied, and very dissatisfied.

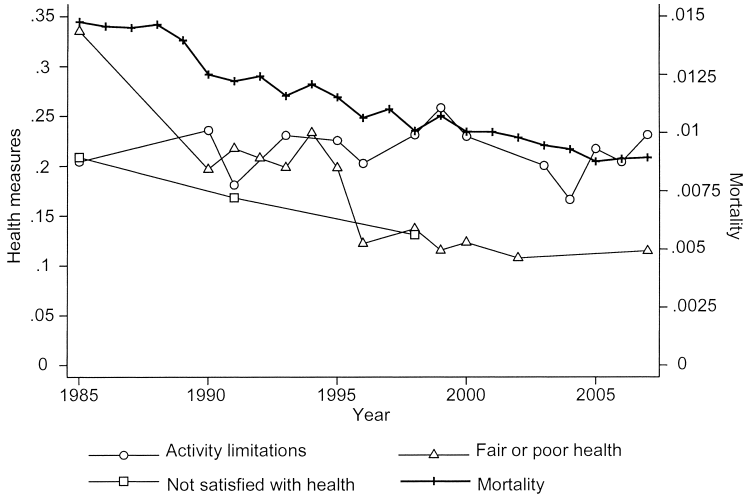


Fig. 9.6 Subjective health and mortality at ages sixty to sixty-four for men
 Sources: Statistics Canada for the mortality data and the General Social Survey for subjective health data.

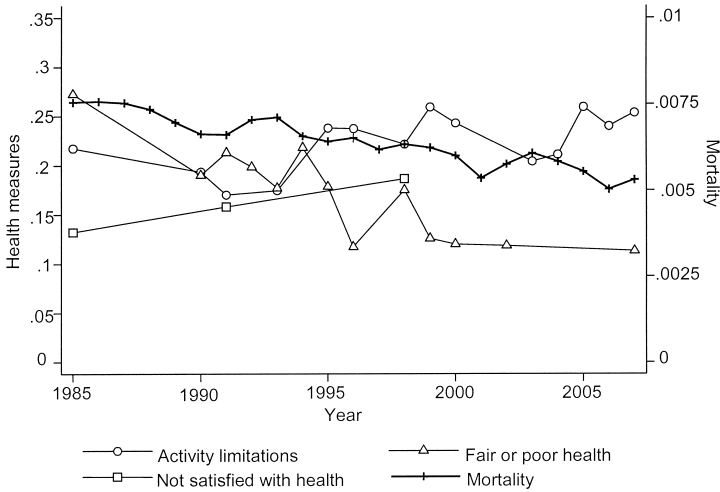


Fig. 9.7 Subjective health and mortality at ages sixty to sixty-four for women
 Sources: Statistics Canada for the mortality data and the General Social Survey for subjective health data.

and 2007, which spans the available years of the General Social Survey. We take the age group sixty to sixty-four in all cases. The mortality rates are graphed against the right-hand-side vertical axis, while the subjective health measures are graphed against the left-hand-side vertical axis.

Figure 9.6 for men shows a clear downward trend for self-assessed fair

or poor health. From over 33 percent in 1985, the level drops to 11 percent in 2007, with steady improvements through the 1990s. Dissatisfaction with health goes down for the three years observable. Activity limitations, however, are quite steady at around 20 percent over the years available in the General Social Survey.

For women in figure 9.7, the patterns are similar, but weaker than for men. There is a decline in self-assessed fair or poor health, but it is less of a decline than for men. Health dissatisfaction increases over the three years shown. Activity limitations, like for men, are quite steady.

This analysis of subjective health measures has uncovered some evidence that more subtle measures of health—specifically self-assessed fair or poor health—show an improvement over the 1985 to 2007 period. However, activity limitations do not show this same change. Overall, these results do not contradict the strong improvements seen in the more objective mortality measures.

9.4.2 Programs and Participation

We now turn our attention to trends in program participation through time. The goal here is to look for any impact of the reforms we have outlined in the preceding as well as for any possible substitution among different government programs. In this analysis, we draw mostly on the annual income source data in the Survey of Consumer Finances/Survey of Labour and Income Dynamics. We also use the administrative data from the Canada Pension Plan and some questions on why there was a departure from a job from the Labour Force Survey.

We begin with cross-sectional participation rates by age in 1981 for men and women. We show indicators of receipt of social assistance, Canada/Quebec Pension Plan benefits, and Unemployment Insurance benefits from the survey data, as well as the rate of Canada Pension Plan Disability Insurance reciprocity from the administrative data. For social assistance, the variable in the Survey of Consumer Finances includes both social assistance (welfare) and also provincial supplements that are paid to low-income seniors age sixty-five plus. For the Canada/Quebec Pension Plan payments, the data cannot distinguish between retirement, survivor, and disability payments.

Figure 9.8 shows the cross-section by five year age groups in 1981. In 1981, retirement benefits through the Canada and Quebec Pension Plans could not be taken until age sixty-five. Furthermore, few men receive survivor benefits because few men have lost their spouse before age sixty-five. So we expect most of those receiving Canada/Quebec Pension Plan income are receiving Disability Insurance benefits. In figure 9.8, the Canada Pension Plan Disability Insurance line from the administrative data is very close to the Canada/Quebec Pension Plan benefit receipt line, until age sixty-five is reached. The level of benefit receipt for the Canada/Quebec Pension Plan

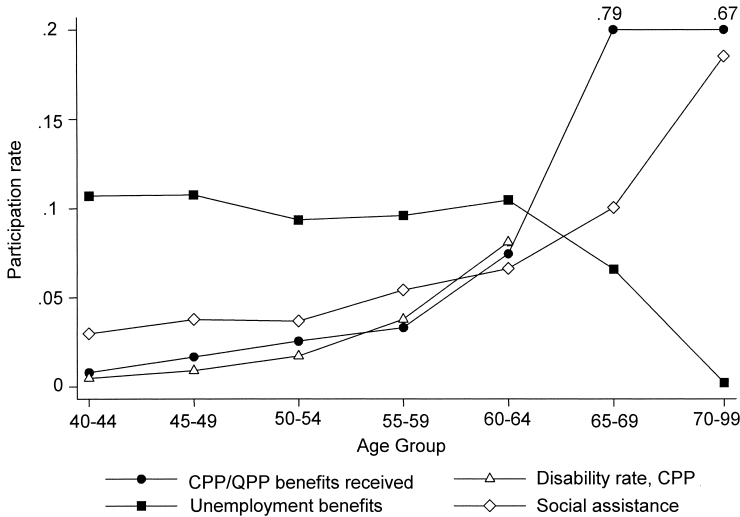


Fig. 9.8 Program participation in 1981 for men

Sources: CPP/QPP benefits received, unemployment benefits, and social assistance come from the Survey of Consumer Finances. Disability rate, CPP, comes from the *Canada Pension Plan Statistical Bulletin*.

at ages after sixty-five is 79 percent in the sixty-five to sixty-nine age range. This is less than 100 percent because some men may still be working and have not yet started their benefits. For the seventy to ninety-nine age range, the rate is even lower at 67 percent. This reflects the fact that those retiring before 1967 received no Canada Pension Plan benefits because the program only began in that year. In 1981, that would include everyone age seventy-nine and older. Unemployment Insurance benefits are fairly steady between ages forty and sixty-four, giving little indication that Unemployment Insurance benefits are being used as a substitute for early retirement benefits. Finally, social assistance rates are fairly low until age sixty-five, when they leap upward corresponding to the availability of provincial income supplements for low-income seniors.

Figure 9.9 repeats the exercise for women. Women are less likely to be on Unemployment Insurance benefits because they are less likely to be eligible because of lower labor-force attachment. There is a substantial gap between the Canada Pension Plan Disability Insurance indicator from administrative data and the indicator for receipt of Canada/Quebec Pension Plan income for women. This makes sense, however, because it is much more common for women in this age range to be receiving survivor benefits following the death of a spouse than it was for men. Participation rates at ages sixty-five to sixty-nine and seventy to seventy-four are lower than for men, again because the labor-market attachment of women is lower, meaning less eligi-

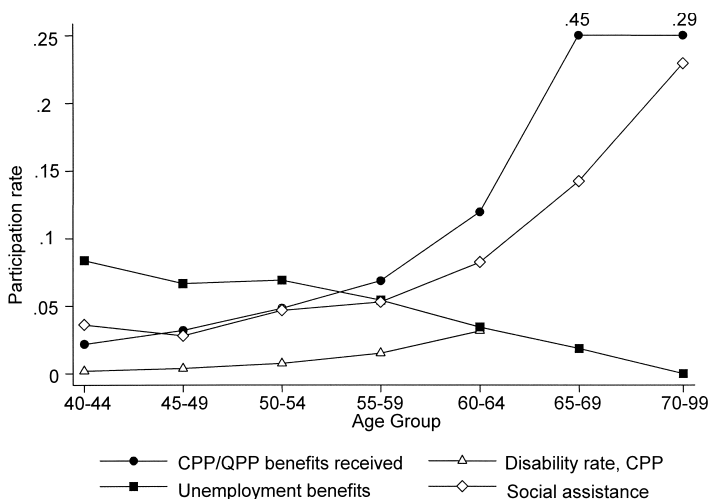


Fig. 9.9 Program participation in 1981 for women

Sources: CPP/QPP benefits received, unemployment benefits, and social assistance come from the Survey of Consumer Finances. Disability rate, CPP, comes from the *Canada Pension Plan Statistical Bulletin*.

bility. The social assistance and Unemployment Insurance benefits appear similar in trend to the men.

We next move forward to 2007. The largest difference in 2007 is the availability of early retirement benefits through the Canada/Quebec Pension Plan at ages sixty to sixty-four, instituted in 1984 in the Quebec Pension Plan and 1987 in the Canada Pension Plan.¹² In figure 9.10, we graph the cross-sectional program participation rates for men by five-year age group. Figure 9.11 does the same for women. The largest difference in the graph is the jump in Canada/Quebec Pension Plan participation at ages sixty to sixty-four. With the availability of an early retirement option through the Canada/Quebec Pension Plan, will there be a decrease in uptake of Disability Insurance benefits? The graph doesn't show any—the disability rate taken from Canada Pension Plan administrative data comes in at approximately the same level as was the case for 1981. There is no sign that the new early retirements were drawing people out of disability insurance claims.

The previous graphs showed the programs from which Canadians were drawing income. These showed the “stocks” at each age and year. To get a more complete picture, we now attempt to put together some information on the “flows” out of work. To do so, we turn to the Labour Force Survey. The Labour Force Survey asks respondents who are not employed the reason

12. See Baker and Benjamin (1999) for details and evidence on the introduction of early retirement in Canada.

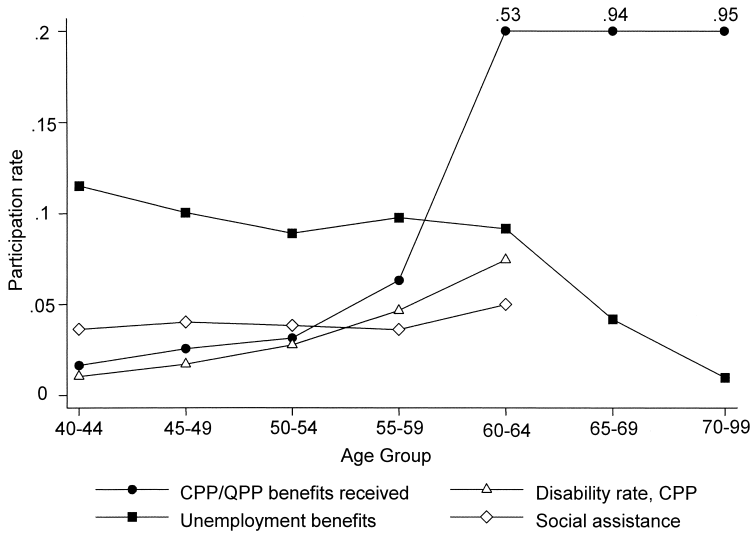


Fig. 9.10 Program participation in 2007 for men

Sources: CPP/QPP benefits received, unemployment benefits, and social assistance come from the Survey of Labour and Income Dynamics. Disability rate, CPP, comes from the *Canada Pension Plan Statistical Bulletin*.

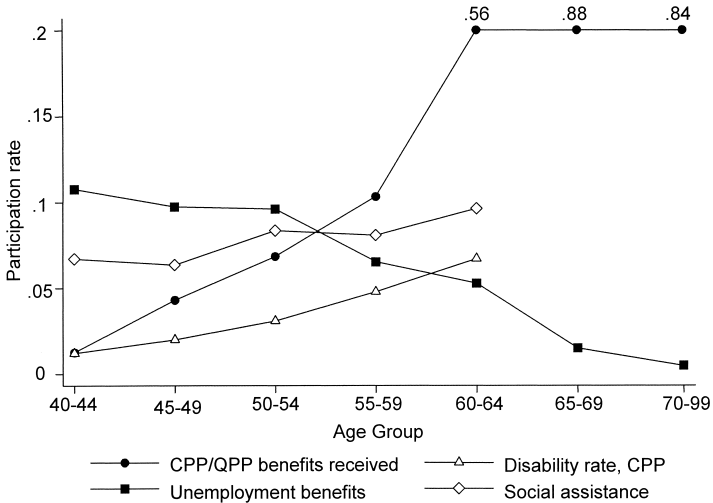


Fig. 9.11 Program participation in 2007 for women

Sources: CPP/QPP benefits received, unemployment benefits, and social assistance come from the Survey of Labour and Income Dynamics. Disability rate, CPP, comes from the *Canada Pension Plan Statistical Bulletin*.

for leaving their last job. Unfortunately, this question is only asked of those who worked in the previous year, so those not working for a year or more are not asked the question. Still, this question can give us an indication if the flow out of jobs into retirement or into disability has shown any large changes through time.

Figure 9.12 shows the flows out of the labor market for men and figure 9.13 for women. Both graphs show age groups fifty-five to fifty-nine and sixty to sixty-four. In all cases, the denominator for the calculation of this rate is all survey respondents of that sex and age. For men, there is an increase in the rate of departures to retirement at ages fifty-five to fifty-nine during the 1980s. For both ages fifty-five to fifty-nine and sixty to sixty-four, there are declines starting around 1995 in the flow out of work and into retirement. If retirement and disability were substitutes, we might expect a mirrored response for departures to disability. However, this is not evident here, with departure rates to disability dropping slightly from more than 1 percent to under 1 percent. No clear correspondence with retirement flows is evident. Women in figure 9.13 show an increase departure rate to retirement thought time. This may reflect the fact that more women in these later years are in the labor force, meaning that more of them have a job from which they can retire. Again, there is no clear correspondence to the departure rates to disability.

The final graphs for this analysis of program participation compares different measures of disability to get a better view of how they may be related. In figure 9.14 for men and figure 9.15 for women, we compare the disability rate from the Canada Pension Plan administrative data, the flow

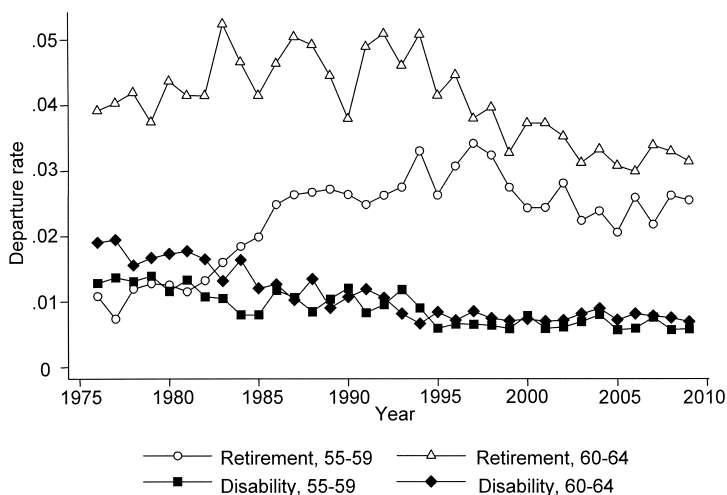


Fig. 9.12 Flows out of the labor market, men

Source: Labour Force Survey.

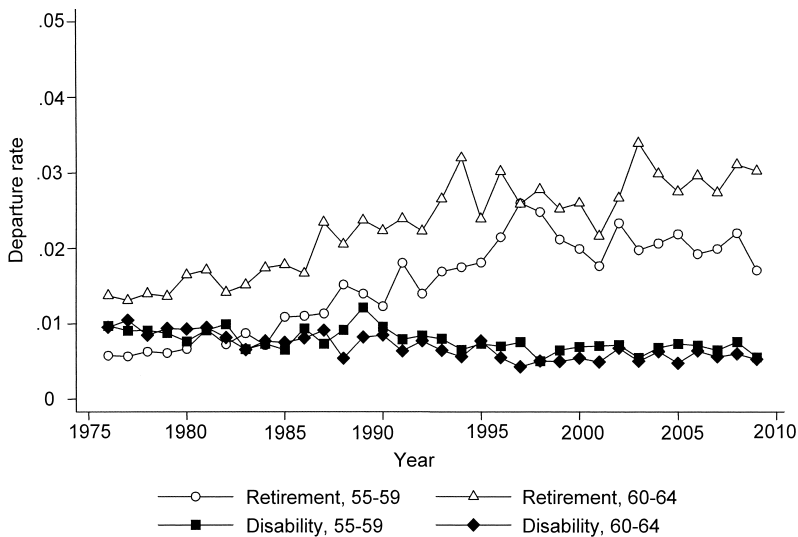


Fig. 9.13 Flows out of the labor market, women

Source: Labour Force Survey.

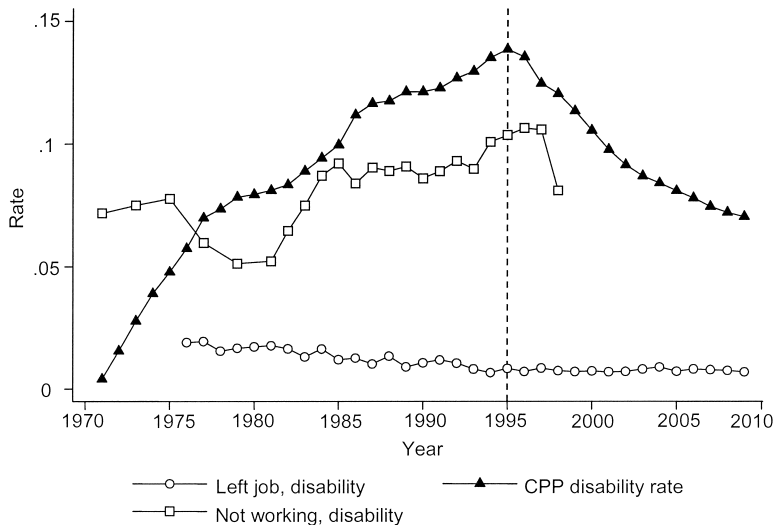


Fig. 9.14 Comparing disability measures, men aged sixty to sixty-four

Sources: Labour Force Survey; the Survey of Consumer Finances; and the *Canada Pension Plan Statistical Bulletin*.

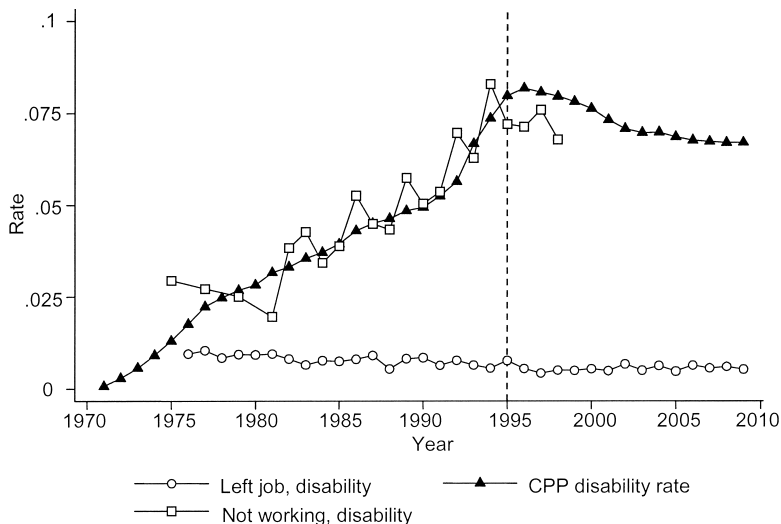


Fig. 9.15 Comparing disability measures, women aged sixty to sixty-four

Sources: Labour Force Survey; the Survey of Consumer Finances; and the *Canada Pension Plan Statistical Bulletin*.

of people leaving their work because of disability from the Labour Force Survey, and the proportion who are not currently working because of disability from the Survey of Consumer Finances. We do this analysis for those aged sixty to sixty-four.

For neither men nor women does there appear to be any interesting trends in the flow into disability through time. For women, the uptrend in those not working because of disability in the administrative data matches very closely the trend in the survey data. For men, there is a similar uptrend, but the correspondence isn't as close. Unfortunately, the Survey of Labour and Income Dynamics that replaced the Survey of Consumer Finances after 1997 did not contain a comparable question on disability, so we cannot observe if the downward trend in the disability rate in the administrative data is mirrored in the survey data after 1997.

Our analysis of program participation reveals two important findings. First, there is very little indication of disability program participation being a substitute for early retirement or unemployment benefits. Second, there is a strong correspondence between survey and administrative data sources for the measurement of disability insurance participation.

9.4.3 Labor Markets and Disability

We next address the question of how overall labor market decisions are affected by changes in receipt of disability insurance. This relates directly to the literature on disability insurance generosity and employment discussed earlier. We graph employment, unemployment, and nonattachment to the

labor force for men and women through time. We then look at trends in the reasons not working—including disability—before looking again at the trends in disability uptake.

Figures 9.16 and 9.17 display the employment rate for men and women, respectively, across three different age groups using Labour Force Survey data. For men aged forty to forty-four and fifty to fifty-four in figure 9.16,

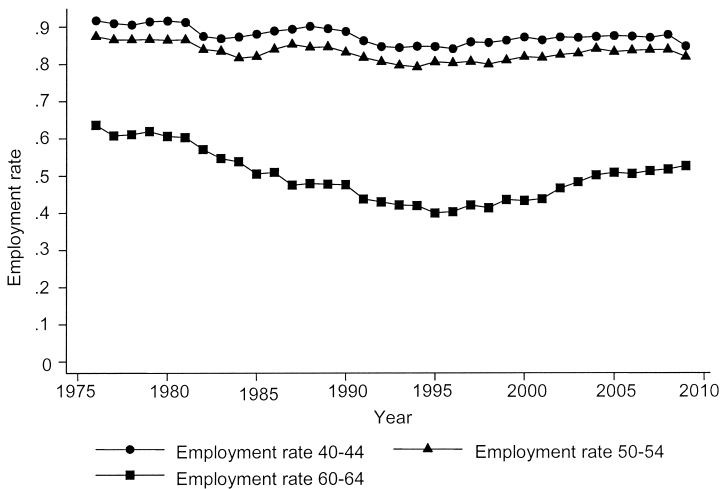


Fig. 9.16 Employment across age groups, men

Source: Labour Force Survey.

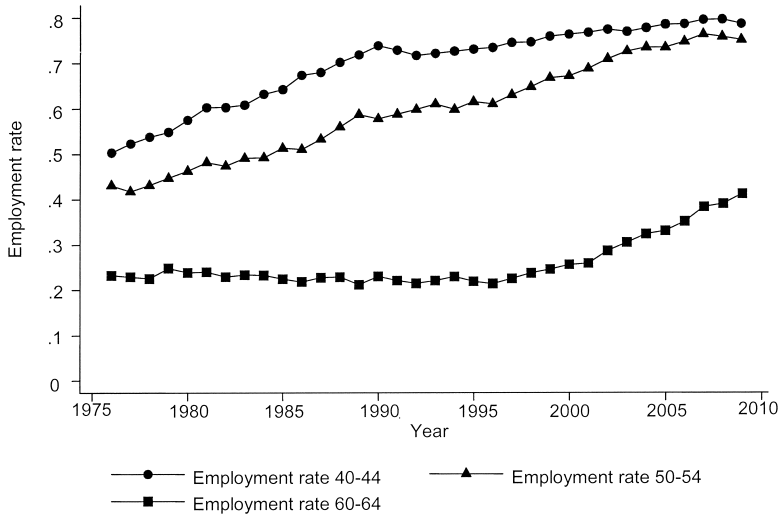


Fig. 9.17 Employment across age groups, women

Source: Labour Force Survey.

most work. There are some slight business cycle fluctuations across time, but the magnitude of these fluctuations is not large. For men aged sixty to sixty-four, there is a downward trend in employment from 63.6 percent in 1976 down to 39.9 percent by 1995. This largely reflects the introduction of early retirement options under the Canada and Quebec Pension Plans in the 1980s. The downward trend and the changing point in 1995, though, line up quite neatly with the patterns of participation in Canada Pension Plan Disability Insurance seen earlier. Since 1995, around half of this drop in employment has been recovered, leaving employment at 52.6 percent in 2009. One explanation for this upswing is provided in Schirle (2008), who argues that the increase in older male labor market participation was driven largely by a preference for joint retirement with their wives—and women of the cohorts in this age range since 1995 were much more likely to work than earlier cohorts.

For females in figure 9.17, any business cycle effects are dominated by an upward trend in employment driven by cohort differences in lifetime employment attachment. The pickup in female employment in the 1970s and 1980s at ages forty to forty-four and fifty to fifty-four is echoed by these same cohorts in the age range sixty to sixty-four after 2000. This increase in employment by older women is consistent with the story in Schirle (2008) mentioned in the preceding.

Unemployment is graphed in figures 9.18 and 9.19 for men and women. Unemployment for both sexes at older ages is low. There are obvious business cycle effects, but no clear correspondence to developments in disability

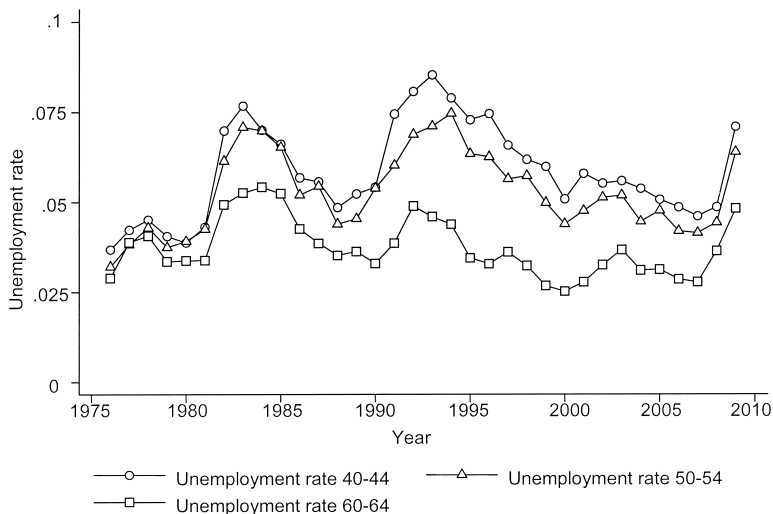


Fig. 9.18 Unemployment across age groups, men

Source: Labour Force Survey.



Fig. 9.19 Unemployment across age groups, women

Source: Labour Force Survey.

insurance. This suggests that there is no large-scale substitution between disability insurance and unemployment.

The proportion of men and women out of the labor force in figures 9.20 and 9.21 across ages look quite similar to what was seen for employment, but in reverse. This suggests that the broad trends in employment discussed in the preceding reflected moves from being out of the labor force into employment, more so than between being unemployed and employed.

The reasons for being out of the labor market can be decomposed using data from the Survey of Consumer Finances and the Survey of Labour and Income Dynamics. In figure 9.22, we graph the proportion of men aged sixty to sixty-four who reported that their primary activity over the previous year was not working or looking for work. The top line shows all those not working or looking for work. This measure does not show the sharp turnaround in 1995 that was evident with the Labour Force Survey data in figure 9.20. This difference may be driven by the fact that the Labour Force Survey asks about employment activity in a reference week, while the Survey of Consumer Finances focuses on activity over the whole year.

The second and third lines in figure 9.22 show the proportion that is not working or looking for work because of retirement or because of disability.¹³ The disability variable is not available after 1998 because of changes in the way disability was measured in the Survey of Labour and Income Dynamics

13. By “disability” here, we mean that respondents reported that they were “permanently unable to work.”



Fig. 9.20 Out of the labor force across age groups, men

Source: Labour Force Survey.

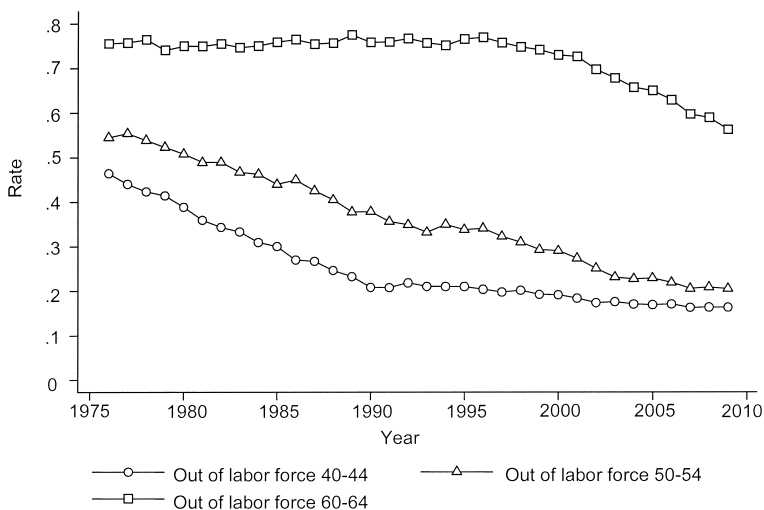


Fig. 9.21 Out of the labor force across age groups, women

Source: Labour Force Survey.

in that year. A large majority of those not working are not working because of retirement. There is a fairly large percentage increase in those not working because of disability from 1971 through 1995 (as seen earlier in figure 9.14), but this does not explain a lot of the overall trend in not working because the proportion out of work for disability remains fairly small as a proportion of all of those out of work.

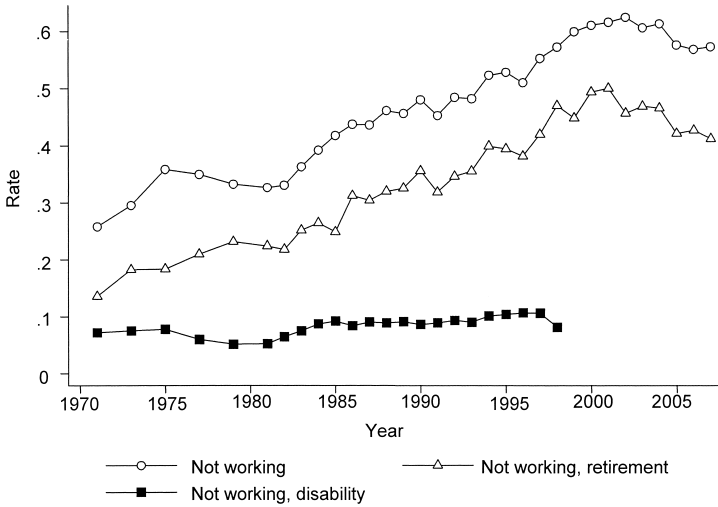


Fig. 9.22 Reasons not working or looking for work, men aged sixty to sixty-four
Sources: Survey of Consumer Finances and the Survey of Labour and Income Dynamics.



Fig. 9.23 Reasons not working or looking for work, women aged sixty to sixty-four
Sources: Survey of Consumer Finances and the Survey of Labour and Income Dynamics.

Figure 9.23 repeats the decomposition of not working for women. Here, the gap between the total proportion not working or looking for work and those who are retired is very large—especially at the earlier years of the time series. This reflects the fact that a large proportion of women in these cohorts during these years were at home rather than in the paid workforce. Retirement increases through time because more women had work from

which to retire. The increase in disability evident in the bottom line is again large as a percentage, but small in terms of how much it can explain overall labor force trends.

This section has found several interesting relationships between labor market behavior and the receipt of disability benefits. First, there is no evidence of using unemployment insurance as a substitute for disability insurance benefits. Second, for women, the large increase across birth cohorts in labor market attachment is the dominant force in the labor market over this time period and disability insurance plays a relatively minor role. Finally, for men there is an interesting correspondence of the trends in employment and disability insurance receipt at ages sixty to sixty-four, before and after 1995. This suggests that there might have been some substitution between disability insurance and employment for men aged sixty to sixty-four over this time period.

9.4.4 Employment and Mortality

Another way to look at the relationship between employment and health is to ask how much work is done for a given level of health. To do so, we graph in figure 9.24 the employment rate and mortality rate of men in 1976 and 2007. The mortality rate is on the horizontal axis, and the employment rate is on the vertical axis. Each point represents the average value for a five-year age group, as labeled. At a mortality rate of 0.01, around 85 percent of males were employed in 1976. However, by 2007 at the same level of mortality, only half of males were employed. Looking the other way, it

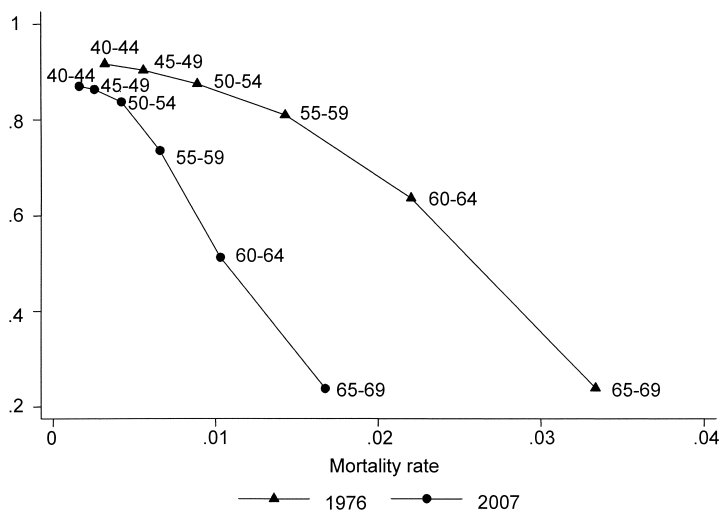


Fig. 9.24 Employment and mortality, men

Sources: Labour Force Survey for employment and Statistics Canada for the mortality data.

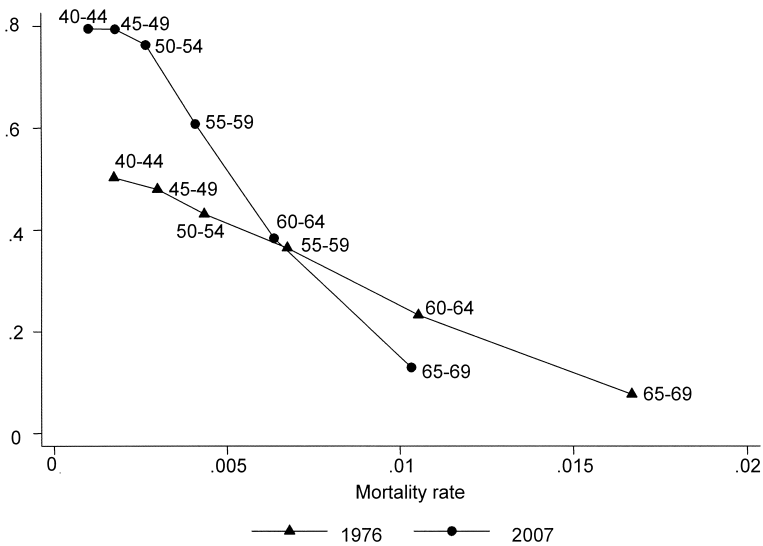


Fig. 9.25 Employment and mortality, women

Sources: Labour Force Survey for employment and Statistics Canada for the mortality data.

took a mortality rate of 0.025 to reach a point of 50 percent employment in 1976, but only 0.01 to reach that same employment rate in 2007. This suggests that, given similar health levels (as measured by mortality), there was lower employment in 2007 than 1976.

Figure 9.25 repeats the same analysis for females. Here, the most important trend is the great increase in employment by females with younger cohorts of women. In this graph, this manifests as a higher employment rate at lower levels of mortality although the lines cross at older ages. This suggest that, for the same level of mortality, we see more employment by females in 2007 than 1976.

9.4.5 Disability and Health

In our last set of results, we look for patterns across age, sex, and time in the relationship between health and disability. We begin by looking at receipt of disability pensions in the Canada Pension Plan and then compare these findings to our measures of mortality and self-assessed health.

The first two graphs of this analysis of labor markets and disability show disability rates by age group and sex using the Canada Pension Plan administrative data. For men (figure 9.26), the peak in 1995 is evident both for those aged sixty to sixty-four (as in figure 9.14) and those at younger ages. The peak at younger ages is comparable in terms of percentage increases, but as a share of the male population at ages forty to forty-four and fifty to fifty-four, disability insurance plays a small role.

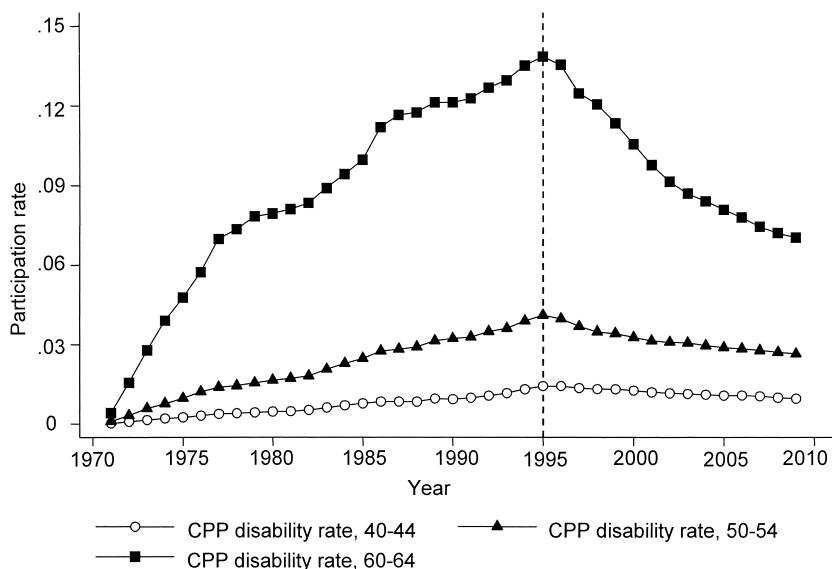


Fig. 9.26 Canada Pension Plan Disability Insurance benefits recipients, men

Source: *Canada Pension Plan Statistical Bulletin*.

The data for women appear in figure 9.27. Over this time period, more women are entering the workforce, as seen in figure 9.17. This means that more women became eligible for Canada Pension Plan Disability Insurance from 1971 onward. This leads to a steeper upward trend—not only is uptake among those who are working growing through this time period, but also the proportion working is growing. After 1995, the proportion receiving a Disability Insurance benefit drops a bit before becoming quite constant at all ages.

Figures 9.28 and 9.29 focus on the disability rates of men and women aged forty-five to forty-nine and compare them to the mortality rates prevailing in those age groups. In figure 9.28, mortality rates trend clearly down from 1970 to 2007, while disability rates follow first an upward trend, then down after the policy changes of 1995. For women in figure 9.17, there is a clear, sharp upward jump in disability pension receipt in the early 1990s, but the rate soon stabilized around 2 percent. In neither the case of men or women is there an obvious relationship between mortality and Canada Pension Plan Disability Insurance benefit receipt.

The next two figures repeat the analysis for the age sixty to sixty-four age group. Again, the upward trend in disability benefit participation is contrasted by trending improvements in mortality. For men in figure 9.30, there is also a fairly large downward trend after the policy reforms of 1995. There

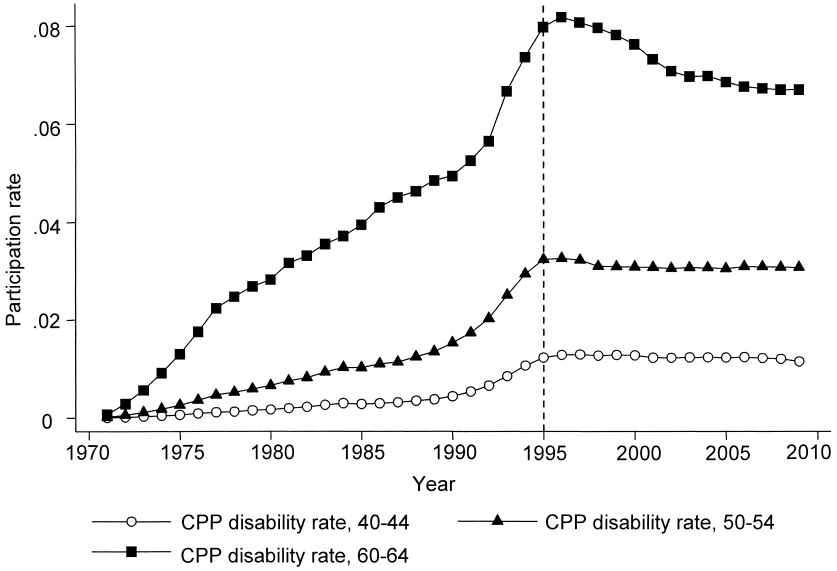


Fig. 9.27 Canada Pension Plan Disability Insurance benefits recipients, women
Source: Canada Pension Plan Statistical Bulletin.

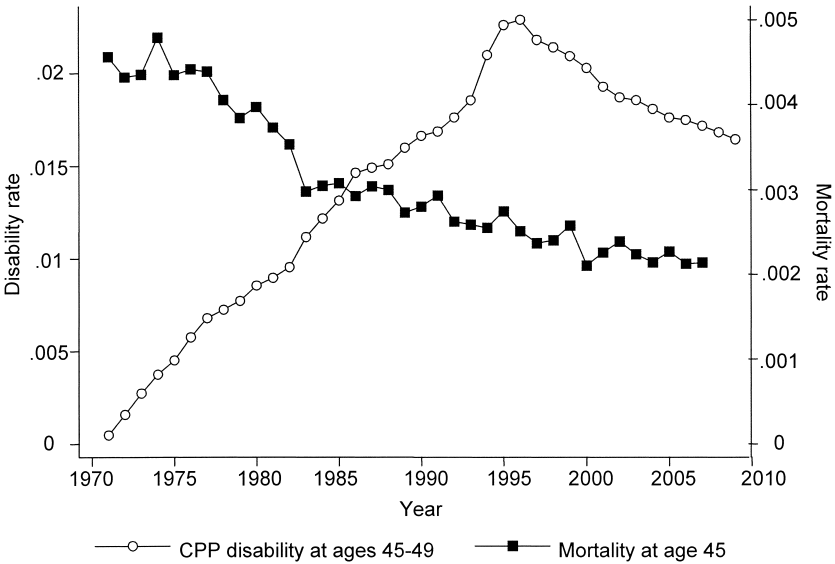


Fig. 9.28 Canada Pension Plan Disability Insurance benefits recipients and mortality rate, men aged forty-five to forty-nine
Sources: Canada Pension Plan Statistical Bulletin and Statistics Canada mortality data.

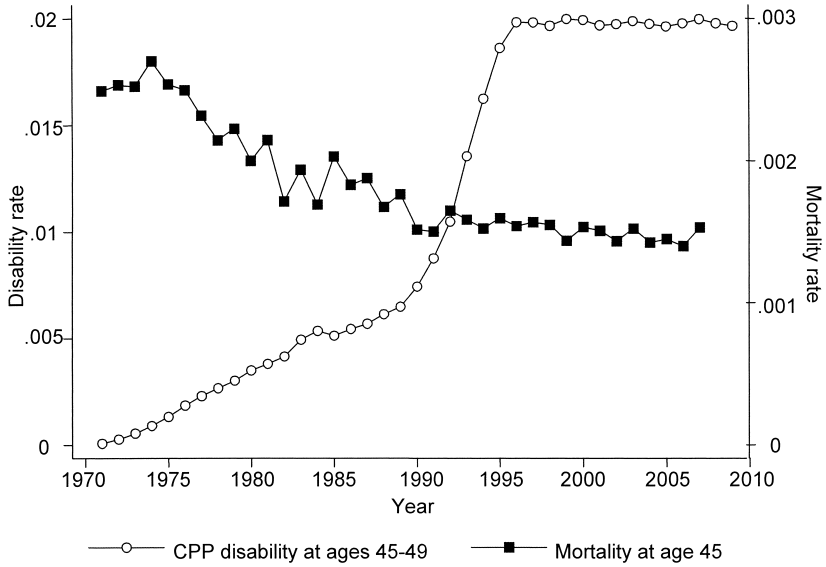


Fig. 9.29 Canada Pension Plan Disability Insurance benefits recipients and mortality rate, women aged forty-five to forty-nine
Sources: Canada Pension Plan Statistical Bulletin and Statistics Canada mortality data.

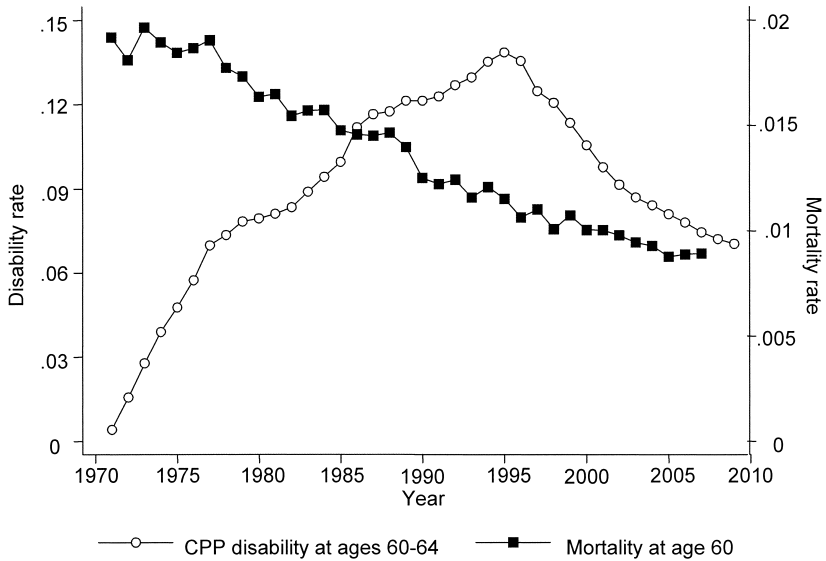


Fig. 9.30 Canada Pension Plan Disability Insurance benefits recipients and mortality rate, men aged sixty to sixty-four
Sources: Canada Pension Plan Statistical Bulletin and Statistics Canada mortality data.

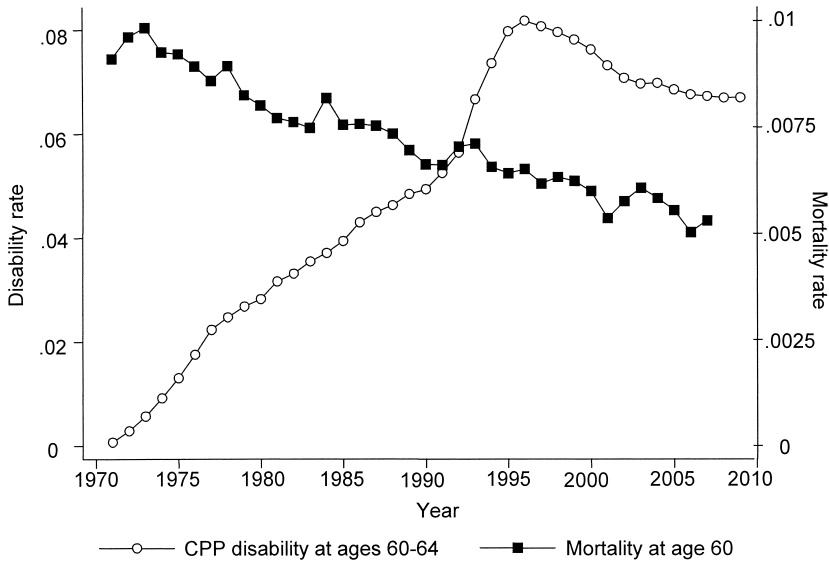


Fig. 9.31 Canada Pension Plan Disability Insurance benefits recipients and mortality rate, women aged sixty to sixty-four

Sources: *Canada Pension Plan Statistical Bulletin* and Statistics Canada mortality data.

is no seeming correspondence to mortality. With women in figure 9.31, the picture looks largely similar as it did for younger women in figure 9.29—no clear relationship is evident.

We now turn to self-assessed health in the final four figures. At ages forty-five to forty-nine for men in figure 9.32, the initial data point for 1985 for being in fair or poor health is at 2 percent. However, for each of the other years, the data bounce in a tight band between 0.005 and 0.01. The same pattern is broadly true for women in figure 9.33 although more of a downward trajectory is evident. In neither case, however, do these trends line up easily with what is observed for Canada Pension Plan Disability Insurance benefit receipt. In figures 9.34 and 9.35, we show the same results for Canadians aged sixty to sixty-four. A stronger downward trend for self-assessed fair or poor health is evident, but again this does not conform with the trends seen for disability benefit receipt.

This analysis of receipt of Canada Pension Plan Disability Insurance benefit receipt and observable measures of health exposes no clear relationship between disability benefit receipt and either of the observable health measures. This evidence makes it hard to suggest that the trends in disability benefits receipt are related to underlying actual health trends.

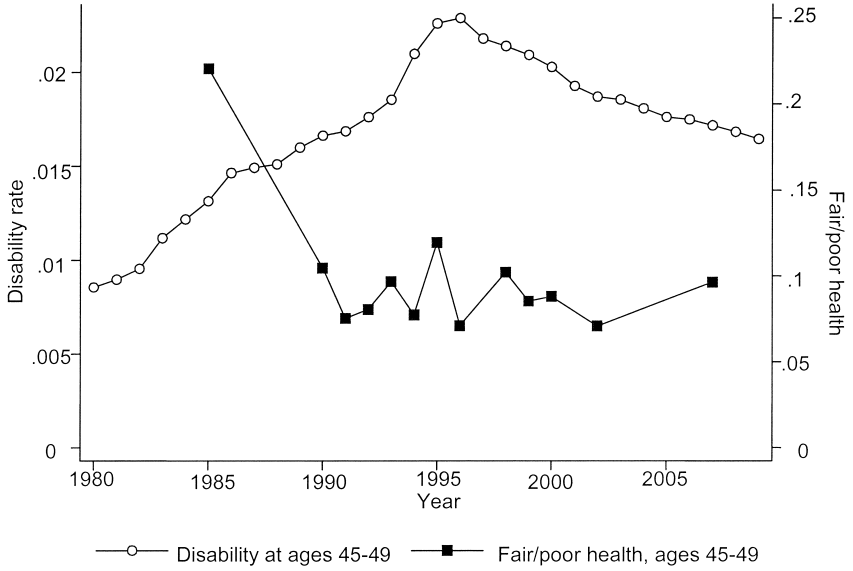


Fig. 9.32 Canada Pension Plan Disability Insurance benefits recipients and self-assessed health, men aged forty-five to forty-nine

Sources: Canada Pension Plan Statistical Bulletin and General Social Survey.

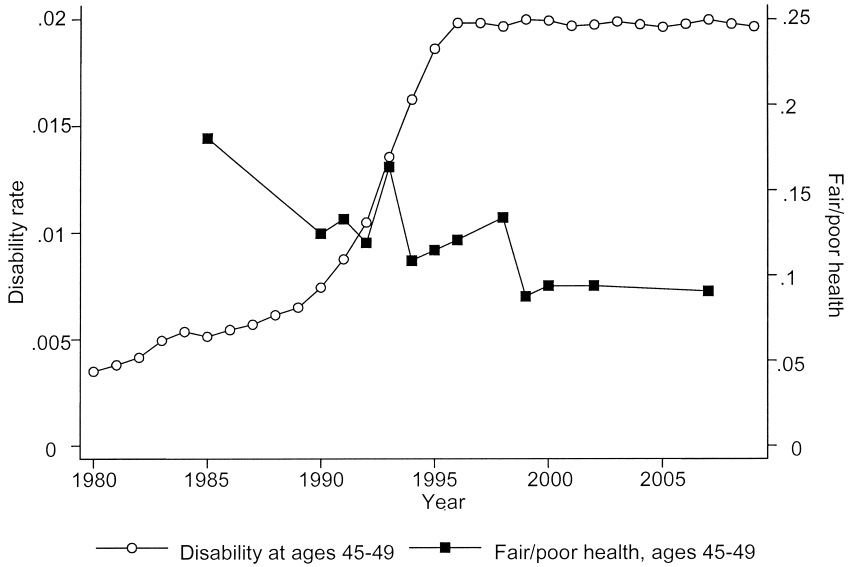


Fig. 9.33 Canada Pension Plan Disability Insurance benefits recipients and self-assessed health, women aged forty-five to forty-nine

Sources: Canada Pension Plan Statistical Bulletin and General Social Survey.

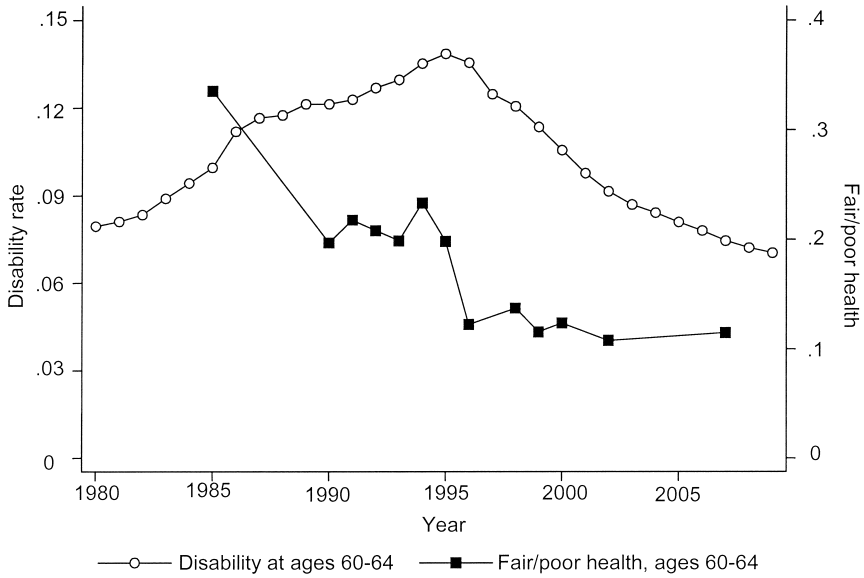


Fig. 9.34 Canada Pension Plan Disability Insurance benefits recipients and self-assessed health, men aged sixty to sixty-four

Sources: Canada Pension Plan Statistical Bulletin and General Social Survey.

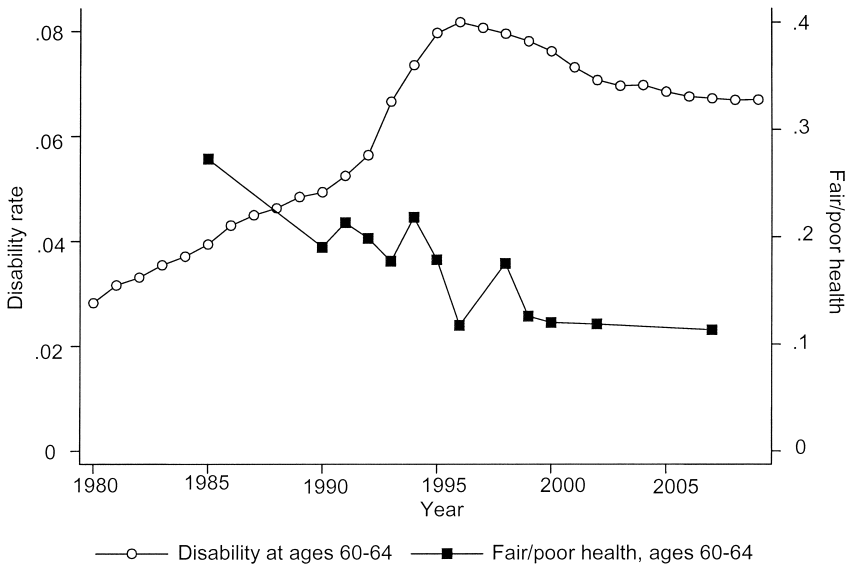


Fig. 9.35 Canada Pension Plan Disability Insurance benefits recipients and self-assessed health, women aged sixty to sixty-four

Sources: Canada Pension Plan Statistical Bulletin and General Social Survey.

9.5 Conclusion

This paper examines disability insurance programs in Canada using a variety of data sources spanning the years 1961 to 2009—almost a half century. Over this period, we document substantial and steady improvements in mortality and some improvements in measures of subjective health. We also see large movements of women into the labor force and significant trend to early retirement for men.

Disability insurance receipt doesn't appear to relate well to these trends in health or mortality, which suggests that something other than underlying health is driving disability benefit receipt. In the labor market, we don't find any evidence of substitution between unemployment insurance and disability insurance receipt, but there are some time series correspondences between early retirement at ages sixty to sixty-four and disability insurance trends—especially around the time of a major Canada Pension Plan reform in 1995.

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