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Incentives to Retire, the Employment of the Old, and the Employment of the Young in Sweden

Mårten Palme and Ingemar Svensson

10.1 Introduction

The idea that unemployment among younger people in a society could be counteracted by inducing exit from the labor market of older workers has been used as an argument for providing generous social security programs. In times of high unemployment rates among younger workers, or in connection to firm closures, the public disability insurance program has been used in order to "save the jobs for the young." Creating jobs for the young has even been the explicit motivation for a special government program, the so-called Age-Shift Allowance, which provided more generous retirement options for an older worker requiring a younger worker to fill the position of the retired worker.

The validity of the argument that retirement of older workers increases the possibilities for younger workers of finding a job depends critically on two factors. First is the substitutability between younger and older workers in the production process. If older workers are not fully replaceable by younger ones, it will, of course, counteract any effect on the unemployment rate of younger workers. Second, retirement of older workers will decrease the production in the economy. This will, in turn, decrease the overall demand in the economy and ultimately the demand for younger workers.

In this paper, we empirically examine the hypothesis that the increasing generosity of the social security system has decreased labor force participation among the elderly. We then investigate whether labor force participation among older workers affects employment among younger workers.

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The paper is organized as follows. Section 10.2 gives an short description of the history of Sweden's pension schemes. Section 10.3 investigates policies based on the argument for providing job opportunities for the young. Section 10.4 analyzes to what extent program provisions affect employment of older workers. Section 10.5 presents the results from the analysis of the relation between labor force participation of older workers and employment of the young. Section 10.6 concludes.

10.2 A Short History of Swedish Pensions

In this section, we give a summary description of the different components of pension programs in Sweden and their development. More details pertaining to the period of our employment data series and a descriptive analysis of the relationship between program provisions and the labor market participation of older workers are provided in section 10.4.

10.2.1 The Public Old Age Pension System

The first public pension system was legislated in 1913 and implemented in January 1914.[1] The process leading to this decision started in 1884. The law covered old age, disability, as well as survivor's pensions. The benefit had two components, a funded, contribution-defined part and a means-tested part. The system covered all citizens, not just workers like some other pension systems at that time.

In 1937, the funded and contribution-defined pensions were replaced by a basic pension (a fixed amount) financed according to the pay-as-you-go principle, and, in 1938, the means-tested benefits were raised and differentiated according to living costs in different municipalities.

The next major reform was implemented in 1948. The basic pension was significantly raised, and the relative importance of the means-tested component was reduced, and it was transformed to a means-tested housing allowance. The pension costs with these changes were expected to increase by more than 100 percent. Before the reform, a significant share of pensioners, especially in the major cities, was still dependent on poverty relief from the municipalities. The goal of the reform was to more or less eliminate poverty among pensioners.

From 1949, the basic pension has been price indexed. Between 1953 and 1968, the real value of the basic pension was also raised, thus giving all pensioners a share of the rapidly rising incomes of the working population during this period.

Even with these improvements of pension benefits, the replacement rates in the 1950s were low, except for low-income workers. Other small groups with significant replacement rates (around 65 percent) were government employees and some white-collar workers in the private sector, who had

1. The account until the early 1960s is based on Elmér (1960) and Molin (1965).

earnings-related pension insurance. For these reasons, the issue of how to supplement the national basic pension with some kind of earnings-related pension insurance became important on the policy agenda. After a series of government investigations and reports, starting in 1947, and after a referendum in 1957 and an extraordinary election in 1958, the decision was finally taken in 1959 about the design of the supplementary pension system—the ATP scheme.

It was a mandatory system covering all employees. Self-employed could choose to stay outside the system. Basically the system was pay-as-you-go, but during the first decades, significant funds were built up in order not to depress national savings. Contributions to the new system were paid on earnings starting in 1960, and the first pensions were paid in 1963. The benefit was based on an average of the best fifteen years of earnings. Initially, a full pension benefit required earnings above a threshold of one basic amount for twenty years.[2] From cohort 1915, the required number of years was then raised by one year for each successive cohort up to thirty years. The implication of this transition rule was that until 1980, it was not possible to get a full ATP pension benefit, and, until 1990, it was necessary to have earnings above the threshold each year between 1960 and retirement to receive a full benefit.

After 1968, the real value of the basic pension was kept approximately constant, but in 1969 a new benefit was introduced—the pension supplement—in order to increase pension benefits for individuals without any or with only low ATP benefits. Thus, also during the 1970s, the minimum pensions were rising just like the ATP benefits were due to the maturing of the ATP scheme during the 1960s and 1970s.

During the 1990s, the major parties in the parliament agreed about a reform to replace the basic pension and the ATP schemes with a new scheme combining a funded contribution-defined part with a pay-as-you-go contribution-defined part. The contribution rate for the former is 2.5 percent of earnings and for the latter 16 percent. These earnings-related benefits are supplemented by a guarantee pension for residents in Sweden, obtainable from the age of sixty-five.

The reform was legislated in stages between 1994 and 2001. The new rules for pension entitlements were implemented in 1999, and the first pensions from the new scheme were paid in 2003 (except for some early pensions during 2001 and 2002).

10.2.2 Occupational Pension Insurance

Already before the introduction of the public pension scheme in 1914, central government employees had significant pension benefits, financed by contributions divided between the employer and the employee. In the early

2. The basic amount is closely linked to the Consumer Price Index and was introduced in the ATP reform as a means for the price indexing of benefits and pension entitlements.

twentieth century, similar schemes were also introduced for local government employees.

Also, in the private sector, some employees were covered by voluntary pension insurance provided by the employer. Until the end of the 1950s, the coverage was however low, especially among blue-collar workers, and the schemes often provided low benefits. Still, in the beginning of the 1950s, an occupational pension solution with better coverage was considered both by the Employer's Confederation and the major unions as an alternative to a national supplementary pension scheme. In 1954, the Employer's Confederation proposed a system organized through collective contracts, with fees paid entirely by the employers and without any involvement from the state (Molin 1965, 192). At this time, the Swedish Trade Union Confederation (LO) had however opted for a mandatory public system.

In 1959, the same year as the ATP supplementary pension reform was decided by the Swedish parliament, negotiations started between the Employer's Confederation and the major unions for white-collar workers in the manufacturing sector about how to adjust the existing employer-provided pension insurances to the new situation. The result was a new occupational scheme, the ITP scheme, to be implemented in 1960. Consequently, from 1960, most white-collar workers in the private sector were covered both by the new national ATP scheme and the ITP scheme. The ITP agreement provided additional benefits to ATP and had a much higher ceiling than the public supplementary pension scheme. The retirement age also was lower than sixty-seven, which still applied to the ATP scheme. Men could retire at age sixty-five with a benefit of 65 percent of the final salary. The pension age of women was originally sixty but was later raised to sixty-five.

In the beginning of the 1960s, the retirement age within the occupational schemes for government employees was also below sixty-seven—between sixty and sixty-five depending on occupation. With the introduction of the ATP scheme, a rule for coordination was introduced in both schemes for government employees: the ATP pension was deducted from the benefits provided by the occupational schemes, that is, the occupational schemes were changed to give supplements to the growing public ATP pensions.

Finally, beginning in July 1973, blue-collar workers in the private sector also were covered by an occupational scheme negotiated between the Employer's Confederation and the Swedish Trade Union Confederation (LO). This new STP scheme provided benefits between age sixty-five and the national retirement age of sixty-seven until the latter was changed to sixty-five in 1976. In addition to this decrease of retirement age, the scheme provided lifelong benefits in addition to the public pensions just like the other three large occupational schemes with about the same replacement rate (10 percent). In this case, however, there were no benefits replacing earnings above the ceiling within the ATP scheme.

The four large negotiated occupational schemes still remain in place but

have undergone several revisions since their introduction. In 1977, the ITP scheme and, in 1991, the scheme for central government employees got supplementary-funded and contribution-defined components. During the last decade, there has been a general transition from defined-benefit pay-as-you-go schemes to funded defined-contribution schemes.

10.2.3 Disability Pensions

As mentioned at the outset, the 1913 pension law also contained regulations for a disability (invalidity) pension. Until 1948, the old age and disability pensions were closely related in terms of financing and benefit rules. The difference was the eligibility criterion—age respective invalidity. An individual was entitled to pension benefit before the age of sixty-seven if his or her working ability permanently was reduced by at least two-thirds due to sickness or disability.

With the 1948 reform, the benefit rules for old age and invalidity pensions became significantly different. While the means-tested component within old age pensions was significantly reduced, the main part of the disability pension was still means tested. The implication of these rules was that a disabled person could earn labor income up to one-third of normal earnings of an individual of his education and place of residence without losing the right to disability pension, but the benefit was reduced accordingly. In 1948, a temporary disability benefit (*sjukbidrag*) was also introduced for individuals who had lost their working ability for a significant amount of time but not permanently.

Means testing as a way of providing partial benefits for individuals whose working ability was not completely lost was replaced by fixed categories of partial benefits in the next major reform of disability insurance, which was implemented in 1963. This reform also coordinated the disability rules within the basic pension scheme and the new supplementary ATP pension scheme. From 1963, the law required that at least half of the individual's working ability was lost and partial benefits of one-third and two-thirds were introduced for cases with some remaining working ability. As previously described, a full ATP pension by the old age pension transition rules was not possible until 1980. By the disability pension rules, however, an individual could receive a considerable supplementary ATP pension already in the beginning of the 1960s because "assumed pension points" from the year of pensioning until normal retirement age were added to pension points based on actual earnings. Thus, the economic incentives to retire with disability pension changed quickly with the 1963 reform and the introduction of the ATP supplementary scheme.

The next reform was implemented in July 1970, implying softer eligibility requirements for elderly workers. In the application of the law, workers aged sixty-three or more were initially considered as elderly, but the age limit was lowered to sixty in 1975. The initiative to this reform came from

the Swedish Trade Union Confederation (LO). The proposal was to increase the possibilities to take labor market reasons into account in addition to the medical condition, and also to decrease the medical requirements when deciding about disability pension for elderly workers.[3] The purpose was to provide better income security for elderly workers displaced by structural change and for elderly workers with demanding working conditions. In the 1970 reform, the lowest partial benefit was also raised from one-third to one-half of full pension.

In July 1972, the eligibility criteria were extended even more. From this date, elderly long-term unemployed could receive a disability pension without any impairment of working ability due to sickness or disability.[4] The original age limit of sixty-three was lowered to sixty in January 1974.

Already, in 1979, the government expressed concern about the fact that male employment was decreasing in ages above sixty and that the employment of women in these ages did not increase in the same rate as for younger women. A commission was appointed to investigate what could be done in terms of labor market regulations, labor market policy, working conditions, pension policy, marginal tax rates and marginal effects from the benefit systems, and the attitudes to work at high ages to increase employment among elderly workers.[5] The commission delivered its report in 1983. No specific policy proposals to promote employment of the elderly were put forward. The economic recession and the high unemployment rates in all ages at that time were stated as motives for this decision.

The growing use of labor market reasons within the disability pension system, well beyond the original social reasons for the rules, was, however, the subject of growing concern during the 1980s, and, finally, these rules were abolished in October 1991. This policy was part of a series of measures to extend the traditional "work principle" within Swedish labor market policy also to sickness and disability insurance.[6] However, it was still possible to take labor market considerations into account in decisions about disability pension for workers above age sixty according to the rules introduced in July 1970. In January 1997, these special rules for elderly workers also were abolished.

In 2003, a major revision of disability insurance was implemented, in part due to necessary adjustments because of the reform of old age pensions. The rules for calculation of the earnings-related benefit that had been in place since 1963 were replaced with new rules meant to insure current income

3. To some extent, this was true also for nonelderly workers.

4. From this date, the term "disability pension" is, of course, misleading because the system for elderly workers now is a combined disability and unemployment insurance. After the 1963 reform, the system was in Swedish called *Förtidspension,* which literally translated means "early retirement pension."

5. See SOU (1983:62, 11–12).

6. See Prop. 1988/89:150. Prop. 89/90:62 and SfU 1989/90:12.

rather than historical income. Disability insurance was transferred from the pension to the sickness insurance scheme. The reform also introduced different rules for individuals aged nineteen to twenty-nine and thirty to sixty-four. These changes were made to emphasize that disability insurance was not meant to provide lifelong benefits, especially not for the young.

10.3 Job Opportunities for the Young as an Argument in Swedish Pension Policy

Ever since 1884, the pension system has been subject of more or less constant analysis, debate, and reform. Reforms of both the old age and disability pension systems have been prepared in government committees, normally with members from all the major parties in the parliament and often including ambitious empirical research. The schemes and reforms have often also been the subject of heated political debate. At two occasions, in 1936 and 1958, pension policy was also major issues in the elections.

The arguments that have been important are those about affordability considering other needs, coverage, funded versus nonfunded, and voluntary versus mandatory systems and the principles and details of benefit calculation. Reforms have been driven mainly by concerns about income security and income standard of older workers and pensioners and the effects of different options on the economy.

As far as we know, the argument that retirement of older workers should be facilitated in order to increase job opportunities for the young have been put forward among legislators only on two occasions in Sweden: in the 1930s and in the 1990s. On both occasions, the economy was severely depressed, with high unemployment rates, especially among young workers. During the 1990s, long-term unemployment peaked in 1996 (except for male young workers where the peak was already in 1993) and then decreased gradually until year 2000.

In the 1930s, the idea of replacing old by young workers was put forward by some members of the parliament from the Conservative party headed by professor Gösta Bagge (Molin 1965, 8).[7] The proposal was that the state should subsidise employers to provide pensions for workers above age sixty-five. In 1935, a liberal member of the parliament proposed mandatory supplementary pensions for all private sector employees, again with decreasing unemployment among young workers as one of the purposes (Molin 1965, 8–9). Neither of these proposals found support in the parliament.

In 1998, the Social Democratic government introduced a new program among the many active labor market programs tried during the 1990s: the Generational Switching Allowance. The scheme made it possible for

7. Gösta Bagge was professor of Social Policy and Economics at *Stockholms Högskola* and leader of the Conservative party from 1935 to 1944.

a worker aged at least sixty-three to retire with a benefit corresponding to the unemployment benefit if the employer agreed to employ a long-term unemployed individual aged twenty to thirty-five. The employer was also required to contribute to the financing with 25 percent. Application for the allowance was only possible during 1998. Only around 840 individuals used the allowance.

Neither the proposal from the Conservatives in the 1930s, nor the Generational Switching Allowance was about major program provisions of old age or disability insurance like retirement ages or other eligibility criteria. They were specific subsidies meant to be temporary.

However, it seems clear that labor market conditions for the young due to the business cycle had an impact on policy. The decision to abolish pure labor market reasons in disability insurance was taken not in 1983, when there was a serious recession and the Swedish industry was subject to large-scale structural change, but in 1989, when there was an exceptional boom in the Swedish economy.

Also, the idea that early retirement of the old might improve job opportunities among the young apparently has some appeal among the general population. The idea of a Generational Switching Allowance was put forward in 1997 by a government commission for the review of youth policies in Sweden.[8] The commission organized local meetings with around 1,800 young Swedes and also ordered a survey among the population aged fifteen to twenty-five. A decrease of the retirement age was a frequent proposal at the meetings and also found support in the survey. The commission argued against a general decrease of retirement ages with the argument that such measures in Denmark, Holland, and France has not helped to reduce unemployment, but argued for retirement through generational switching and also for subsidized career breaks if the employer gives job to an unemployed worker.[9]

10.4 Program Provisions and the Employment of Older Workers

As in most other industrialized economies, the increasing female labor force participation and the decreasing labor force participation of older male workers are two of the main changes of Sweden's labor force in recent decades. Figure 10.1 shows the development of labor force participation rates in different age groups for male and female workers, respectively. An apparent change in the labor force is the long-term decline of the share of the male group aged between sixty and sixty-four as well as a decline in male

8. See SOU (1997:40).

9. Subsidized career breaks were introduced in twelve municipalities in 2002 and for the whole country in 2005. An evaluation of this policy is in Nordström Skans and Lindqvist (2005).

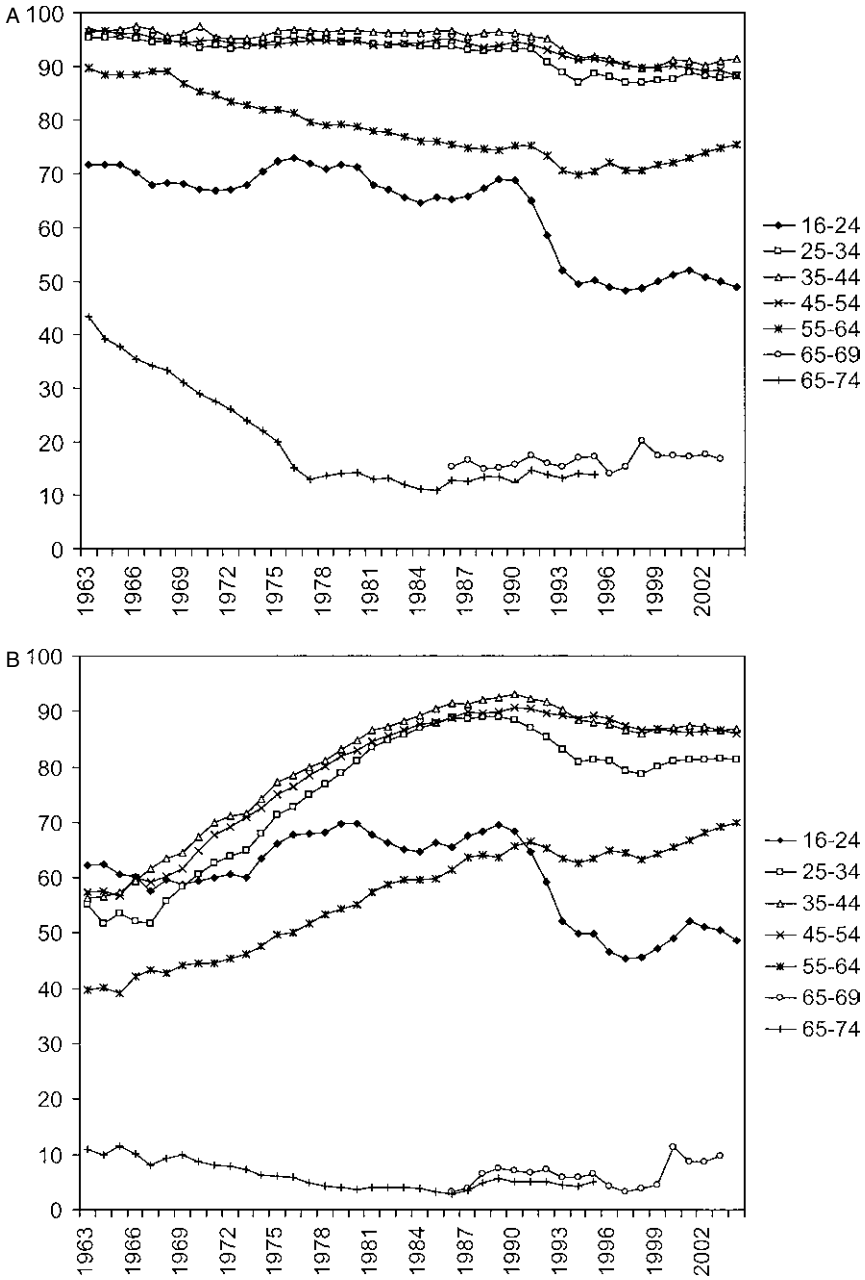

Fig. 10.1 Labor force participation rates in Sweden 1963–2006: *A*, Males by different age groups; *B*, Females by different age groups

Source: Various reports of the Swedish Labor Force Survey, provided by Statistics Sweden.

labor force participation of those older than age sixty-five in the 1960s and early 1970s. An apparent candidate for the explanation to this development is the build up of the Swedish income security system since the early 1960s. In this section, we investigate how these changes affected economic incentives to leave the labor market.

10.4.1 The Old Age Public Pension System and Occupational Pensions

The introduction and maturity of the supplementary pension program (ATP) and the lowering of the normal retirement age are the two most important changes for old age pensions in Sweden during the period under study. Because white-collar workers in the private sector as well as employees in the public sector did have negotiated pension plans before ATP was implemented, the ATP reform did primarily affect blue-collar workers in the private sector. This development is revealed in figure 10.2, which shows the development of average pension benefit and different pension sources by year of birth for cohorts retired between 1955 and 1982, estimated from a cross section in 1983. Each panel shows one of the four occupational pension groups.

For the earlier cohorts, the sampling error is large, and there is probably an upward bias due to differential mortality by income. Still the results in figure 10.2 reveal a clear pattern. For former employees in the public sector, the introduction of the supplementary pension program is to a large extent crowded out by lower occupational pension benefits. This is because of the rules for coordination between the ATP and occupational schemes described in section 10.2. For former white-collar workers in the private sector, there is much less of "crowding out" from the occupational pension scheme. However, the largest relative improvement is for blue-collar workers in the private sector, who before the introduction of ATP in general had no or very low occupational pension benefits.

Also, the level of the basic pension has increased since the early 1960s. Figure 10.3 shows this development for both the old age and the disability pension benefits. Most of the increase can be attributed to the introduction of the special supplement benefit, which is a benefit targeted at pensioners with no or very low supplementary benefit. The divergence of the two graphs in figure 10.3 represents the introduction of a double special supplement for the disability pension benefit.

Table 10.1 shows normal, early, and delayed retirement ages in the national old age pension system. Before the introduction of ATP, pension could only be claimed from age sixty-seven. When the income-related ATP scheme was introduced, both the basic and the supplementary part became accessible starting from age sixty-three with a 0.6 percent actuarial reduction for each month of early withdrawal before age sixty-seven. In 1976, the normal retirement age was decreased to sixty-five and the actuarial reduction lowered to 0.5 percent per month. However, as described in section 10.2, the

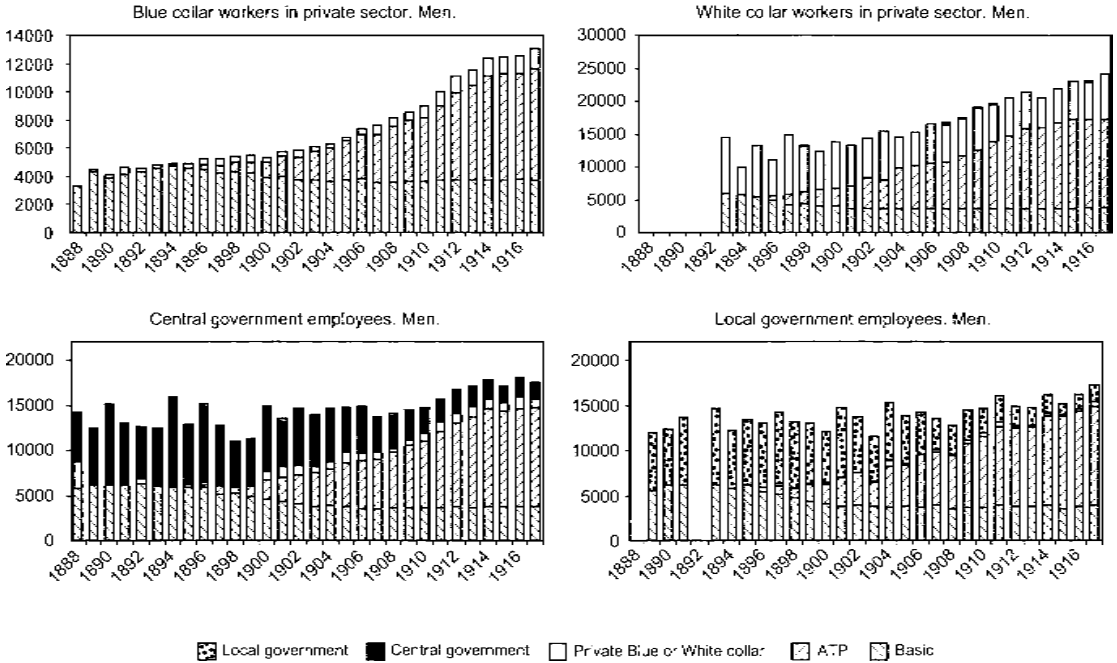

Fig. 10.2 Levels and composition of pension benefits by cohort

Notes: Each panel shows one of the main occupational pension groups. Birth for cohorts retired between 1955 and 1982 are estimated from a cross section in 1983.

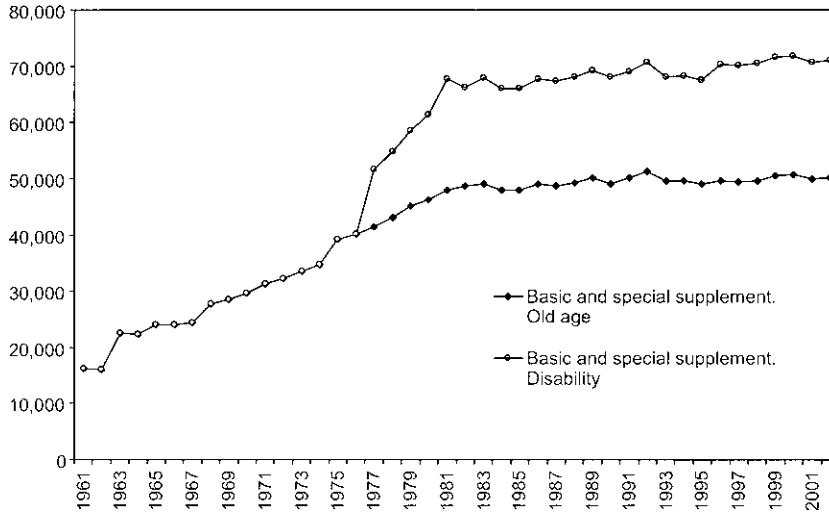

Fig. 10.3 Level of basic pension benefit from the national pension scheme

Table 10.1 Normal, early, and delayed retirement ages along with actuarial adjustment factors in the national old age pension system

Period	NR	ER	UR	Reduction per month, % of benefit	Increase per month, % of benefit
1914–1962	67				
1963–1976 (June)	67	63	72	0.6	0.6
1976 (July)–1990 (June)	65	60	70	0.5	0.5
1990 (July)–1997	65	60	70	0.5	0.7
1998–	65	61	70	0.5	0.7

Note: NR = normal retirement; ER = early retirement; UR = delayed retirement.

change in the normal retirement age did only affect workers not covered by the main occupational pension programs, such as farmers and homemakers. White-collar workers in the private sector had an agreement on normal retirement age at sixty-five already in 1960 and public-sector workers' retirement ages between sixty and sixty-five, depending on type of occupation. Finally, blue-collar workers in the private sector had an agreement in 1973 on normal retirement age at sixty-five.

The effect of the changes in the normal retirement ages is apparent in figure 10.1, showing the development of labor force participation rates in different age groups. The graph for the group aged between sixty-five and seventy-four declines rapidly in the 1960s and early 1970s, that is, during the period when the lower retirement ages were introduced in different sectors

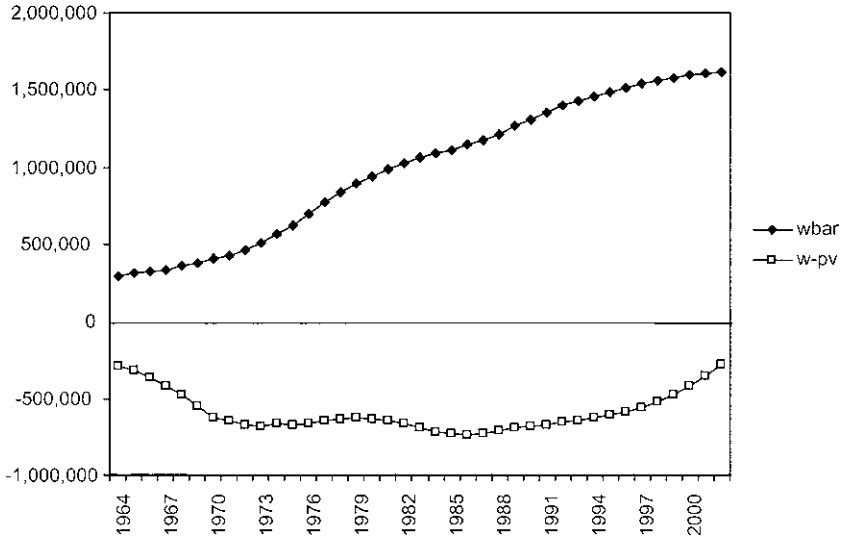

Fig. 10.4 The development social security wealth and social security wealth minus peak value

of the economy. After 1976, the labor force participation rate has remained on a very low level in this age group.

The introduction of an income-related supplementary pension system, the increase of the minimum pension level, and the lowering of retirement ages are likely to have two contradictory effects on incentives to remain on the labor market. First, for at least some workers, because the benefit levels are substantially increased, it will create a wealth effect toward earlier exit from the labor market, provided that leisure is a normal good. The lowering of the normal retirement ages had similar effect. Second, because the supplementary pension system, as opposed to the prereform basic pension, is related to the contributions made to the scheme the gain from remaining in the labor force increases during the years of maturity of the ATP scheme. Both the basic and the ATP schemes also include an actuarial reduction for those who start to claim benefits before the normal retirement age and an actuarial addition for those who delay retirement. This will create an incentive to remain in the labor force.

The resulting time series indexes of the average incentives faced by persons who retire in each year are shown in figure 10.4. This graph summarizes all changes in the social security system described in the preceding. It has, as expected, an upward trend in social security wealth illustrating the greater incentives to retire earlier through an income effect from the various reforms in the recent decades. The growth of the economy also contributed to the increasing trend for social security wealth. But also the gain to postponing

retirement, measured by the peak value, increases, at least in the beginning of the period.

To sum up, we have two contradictory effects over time on incentives to remain on the labor market, and, as figure 10.1 reveals, the trend for labor force participation of men and women go in the opposite direction. For reasons explained in the next subsection, there is also reason to believe that the decreasing labor force participation of elderly male workers is related to the provisions within the disability scheme rather than to the incentives created by the old age pension scheme.

Our conclusion from these facts is that it is hard to find any connection between the time series of incentives to retire and the labor force participation of elderly workers. This is, however, not contradicting our previous results where we find significant effects with the expected signs of incentives on retirement behavior in a cross section of individuals, where there are many sources of identifying variation in the data (Palme and Svensson 2004). Also, the result is consistent with the cross-country analysis in Gruber and Wise (1999). The incentives from the earnings-related old age pension scheme with actuarial adjustments for early and postponed retirement help keep the average retirement age through the old age pension pathway comparatively high (it has been around sixty-five since the middle of the 1970s, i.e., close to the normal retirement age).

10.4.2 The Disability Insurance Program

In section 10.2, we described how the eligibility rules for disability pension changed significantly in 1970 and how the system was transformed into a combined sickness and unemployment insurance in 1972. The 1972 rules were abolished in 1991 and the 1970 rules in 1997. This development is summarized in table 10.2.

Figure 10.5 shows the available data on the number of new disability pensions per year during the period 1961 to 2006. There was a very big increase in connection with the 1970 reform. There was again an increase in the

Table 10.2 **Eras of different eligibility rules in the Disability Insurance**

Period	Medical reasons	Possibility to take labor market and social conditions into account	Favorable rules for older workers	Labor market reasons
–1962	Yes	Very small	No	No
1963–1970 (June)	Yes	Some	No	No
1970 (July)–1972 (June)	Yes	Yes	Yes, aged 63–66	No
1972 (July)–1974 (June)	Yes	Yes	Yes, aged 63–66	Yes, aged 63–66
1974 (July)–1976 (June)	Yes	Yes	Yes, aged 60–66	Yes, aged 60–66
1976 (July)–1991 (Sept)	Yes	Yes	Yes, aged 60–64	Yes, aged 60–64
1991 (Oct)–1996	Yes	Yes	Yes, aged 60–64	No
1997–	Yes	Very small	No	No

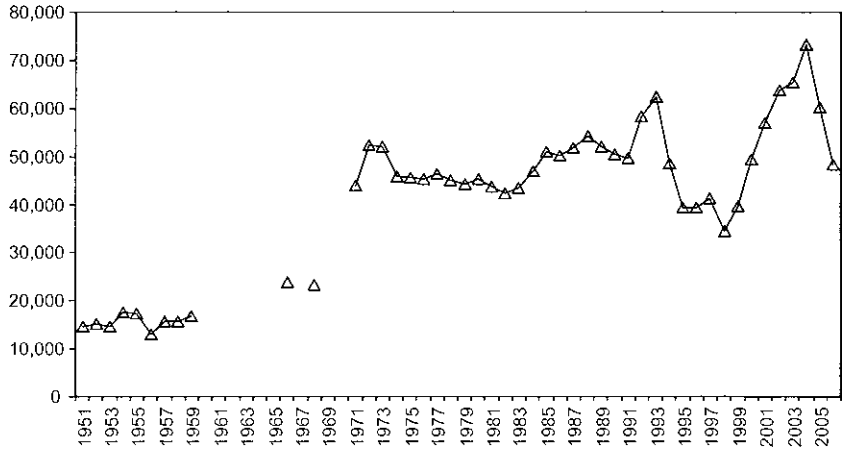

Fig. 10.5 Annual number of new disability pensions, 1951–2006

middle of the 1980s. This coincided with a more extensive use of the pure labor market reasons introduced in the 1972 law. The use of these reasons peaked in 1985 when around 20 percent of the new pensions were for reasons without any medical condition. After 1990, the rates have fluctuated a lot, but the average number of new pensioners has been on the same level as during the late 1980s.

Figure 10.6 shows that the growth of the stock of disability pensioners among males aged fifty-five to sixty-four corresponds closely to the growth of males outside the labor force in the same age group in the period 1968 to 1990. Although there is some mismatch between these series due to partial disability benefits, the correspondence between these series of data motivates the conclusion that disability pension was the dominating pathway to retirement below age sixty-five during these decades.

After the eligibility rules for labor market reasons were abolished in 1991, the task of providing unemployment insurance was taken over by the occupational systems. Between 1991 and 1994, the number of individuals in the age group fifty-five to sixty-four having occupational pension benefits as their main income source increased from 1.3 to almost 4 percent, thus accounting for a significant part of the gap between the stock of disability pensioners and the total number of individuals outside the labor force that appeared at that time according to figure 10.6.[10] After 2002, the number of men on occupational pension decreased, but the number of women remained around 4 percent still in 2005.

After 1998, the labor force participation among males aged fifty-five to

10. This is defined as at least 80 percent of total annual income from work or transfer payments. The estimate is from our own calculations on income statistics provided by Statistics Sweden (the LISA database).

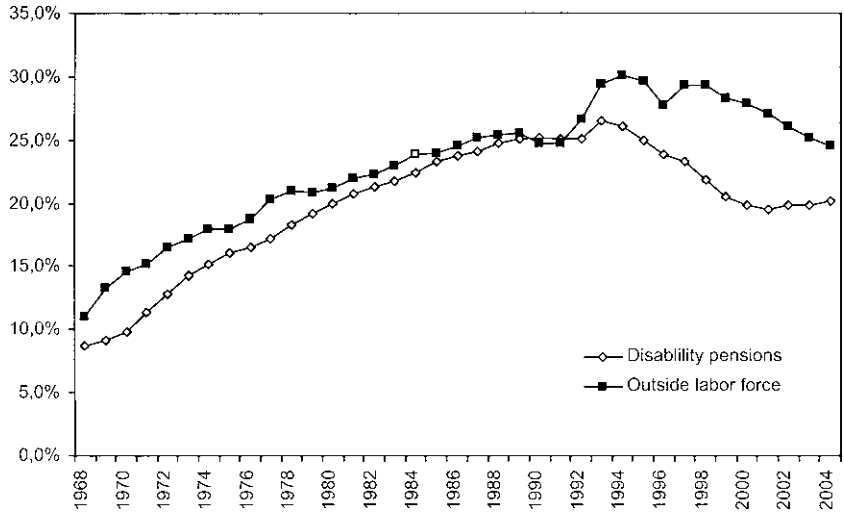

Fig. 10.6 Share with disability pension (including partial pensions) and share outside the labor force, males aged 55–64

sixty-four has increased significantly. This change coincides in time with the abolition of the special eligibility rules for elderly workers introduced in 1970. As we have shown elsewhere (Karlstrom, Palme, and Svensson 2008), at least initially there was no positive effect on the number of individuals actually working from this reform. In the first few years after the reform, the number of long-term unemployed and the number of individuals with long sickness benefit periods increased. The first and often also the second of these groups are included in the labor force along with those who are actually working.

10.5 Is there a Relation between Employment of Older and Younger Workers?

To investigate the potential relation between employment of older and younger workers, let us first take a look at the development of the aggregate series. Figure 10.7 shows labor force participation rates for male and female worker aged between fifty-five and sixty-four as well as between sixteen and twenty-four, respectively, along with unemployment rates for the younger age group from 1963 and onward. The main changes in the income security programs are marked with vertical lines in the figure. The changes in the old age pension program, marked with solid lines, include the introduction of the supplementary pension program in 1963 and the decrease in the normal retirement age from age sixty-seven to sixty-five in 1976.

The development of labor force participation for the age group fifty-five

to sixty-five shows a slight positive trend from around 65 percent in the early 1960s to almost 75 percent by the end of the period under study. The driving force behind this increase is the rapid overall increase of female labor force participation in the Swedish economy. There is no apparent effect of any of the changes in the income security programs marked in figure 10.7 on the labor force participation rates of the older workers. However, such changes may be masked by the overall increase in the female labor force participation.

For the labor force participation rate of the younger age group, there is a sharp drop in the economic recession in the early 1990s, when it drops from around 70 to around 50 percent. A similar shift can be seen for the unemployment rate for this age group. However, as opposed to the labor force participation rate, the unemployment rate decreases to a lower level after the initial increase, although the postrecession level is substantially higher than the stable level before the recession. The main reason behind the lower labor force participation rate for the young age group is that the education programs introduced in the recession tended to be permanent as well as a major build up of higher education starting in the early 1990s.

There is no apparent covariation between the development of labor force participation of the older workers and the unemployment rate of the young. Although the increase in youth unemployment in the 1970s is accompanied with a slight increase in labor force participation of the elderly, the decline in youth unemployment in the 1980s was not accompanied by a decline in labor force participation of the elderly. Also, the huge increase in youth unemployment in the early 1990s was apparently driven by the economic recession rather than changes in labor force participation of the older workers.

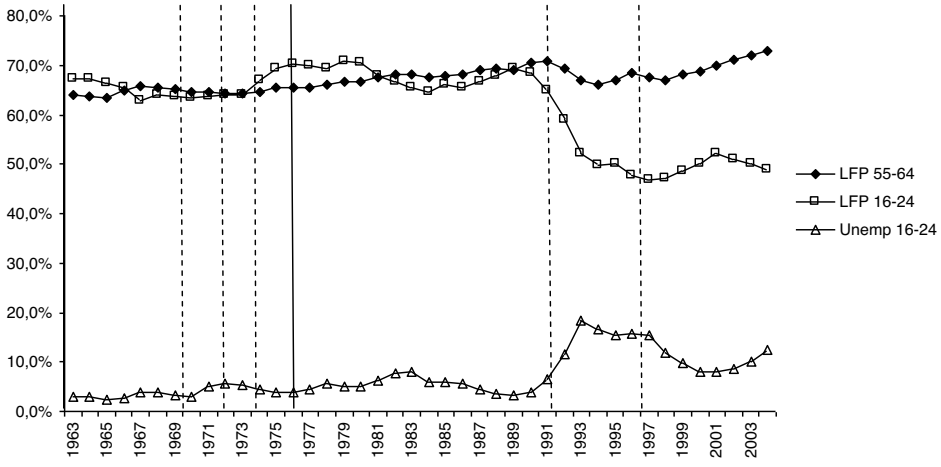

Fig. 10.7 LFP of older workers, LFP of younger workers, unemployment of the young, and major changes in the income security systems: Males and females pooled

Figure 10.8 shows the same development as in figure 10.7, but now the data is confined to male workers in order to exclude the effect of the trend in female labor force participation. The development of the labor force participation rate for the older age group can be interpreted as an effect of changes in the income security programs: the decline starting in the early 1970s follows the more generous eligibility rules implemented in the early 1970s. The slight increase follows in particular the abolition of the special eligibility rules for older workers in the Disability Insurance. Again, it is not possible to interpret the changes in the development of youth unemployment to be driven by changes in labor force participation of the old.

The relation between labor force participation rates of older workers and unemployment rates in younger age groups are further investigated in figure 10.9, which shows labor force participation rates for the age group fifty-five to sixty-five, along with the development of the unemployment rate for young workers aged sixteen to twenty-five, as well as that of prime aged workers aged between twenty-five and fifty-four. To facilitate the interpretation of covariations, the unemployment rate is measured on the right-hand scale, and the labor force participation rate is shown on the left-hand one.

The results in figure 10.9 shows that the unemployment rate among prime aged workers is much less volatile than that of younger workers. Also, the trend toward an increased youth unemployment starting in the early 1960s until the early 1980s is not present for the prime aged workers. Thus, the trend toward a higher labor force participation rate among older workers was not reflected in a corresponding trend of higher unemployment rate among the prime aged. The development since the early 1990s is also hard to interpret as supporting the view of a covariation between the labor force participation of the old and the unemployment rates of the younger age groups.

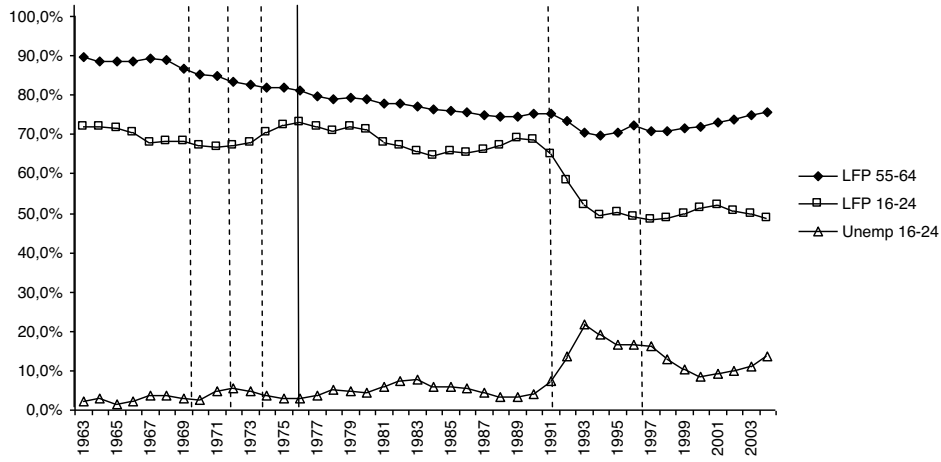

Fig. 10.8 LFP of older workers, LFP of younger workers, unemployment of the young, and major changes in the income security systems: Males

Figure 10.10 shows the development of labor force participation rates for the three main age groups. The slight increase in labor force participation rates for both older workers and the prime aged can be attributed to the very large increase in female labor force participation. Again, it is not possible to interpret the data as the development of labor force participation of the old are related to that of any of the other groups.

Another way to study the relation between labor force participation of the old and employment of younger workers is through regression analysis. We depart from the specification:

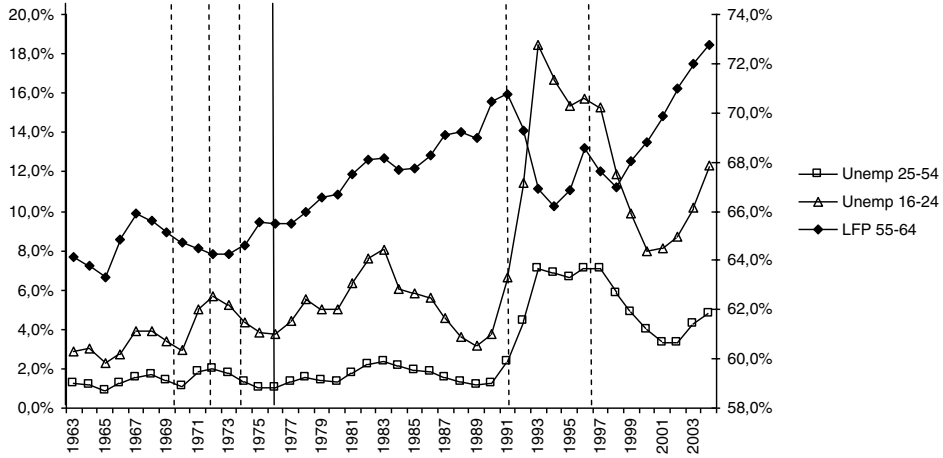

Fig. 10.9 LFP of older workers, unemployment rates of younger and prime age workers: Males and females pooled

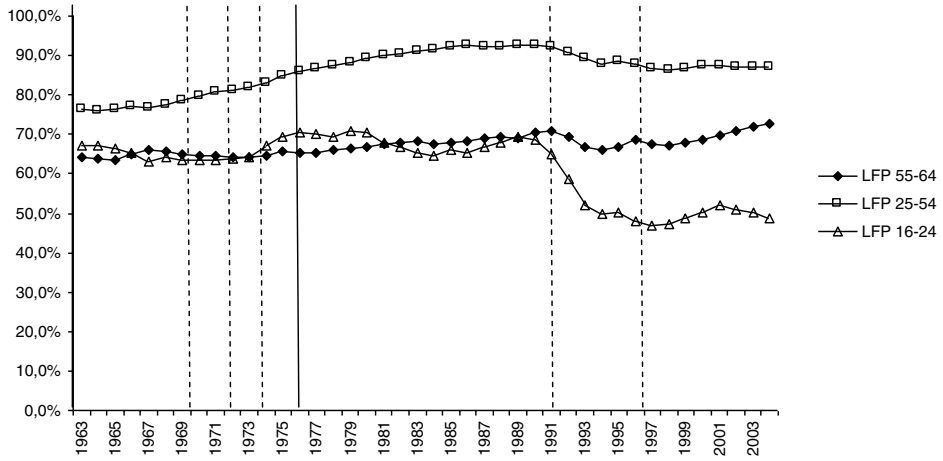

Fig. 10.10 LFP of different age groups: Males and females pooled

$$(1) \qquad U_{\text{young},t} = \alpha + \beta \text{LFP}_{\text{old},t} + \delta X_t + \varepsilon_t,$$

where $U_{\text{young},t}$ measures the unemployment rate in the young age group, $\text{LFP}_{\text{old},t}$ is the labor force participation rate among older workers, X_t other observable characteristics also likely to affect the unemployment rate of the young, and, finally, ε_t measuring unobservable characteristics and functional form deficiencies affecting the dependent variable.

Table 10.3 shows the results where different specifications of equation (1) have been estimated when the data on males and females have been pooled. The upper panel of table 10.3 shows the results from specifications where the vector of controls has been excluded and the lower panel from those where it has been included. Each column represents one outcome variable. For the young age group, we have three different outcomes: the unemployment rate (UE), the employment rate (EMP), and the share in schooling (SCH). For the prime aged group, we have only two outcomes: the unemployment rate (UE) and employment (EMP). Table 10.4 shows the corresponding results to the upper panel of table 10.3 for males and females separately, that is, when controls are excluded, and table 10.5 shows the results separately for males and females corresponding to the lower panel of table 10.3, that is, when controls are included in the specification.

Table 10.3 **Direct relationship between the elderly labor force participation and the employment and unemployment of young and prime age individuals (men and women combined)**

	Youth 16–24			Prime 25–54	
	UE	EMP	SCH	UE	EMP
Levels	0.129	–0.579	0.698	0.112	0.337
	(0.024)	(0.129)	(0.080)	(0.020)	(0.059)
3-year lag on elderly employment	0.135	–0.680	0.741	0.129	0.227
	(0.025)	(0.128)	(0.073)	(0.021)	(0.069)
5-year difference	–0.136	1.612	–0.728	–0.222	1.058
	(0.146)	(0.440)	(0.234)	(0.105)	(0.164)
5-year log difference	–1.001	1.625	–1.001	–3.578	0.720
	(0.470)	(0.465)	(0.470)	(1.961)	(0.105)
		With controls			
Levels	0.225	0.043	0.236	0.153	0.655
	(0.159)	(0.722)	(0.424)	(0.142)	(0.292)
3-year lag on elderly employment	0.374	–1.541	1.071	0.372	–0.326
	(0.087)	(0.395)	(0.213)	(0.072)	(0.189)
5-year difference	–0.048	1.231	–0.474	–0.096	1.052
	(0.096)	(0.338)	(0.197)	(0.053)	(0.172)
5-year log difference	0.506	0.999	–0.789	–1.397	0.665
	(1.022)	(0.242)	(0.454)	(0.968)	(0.089)

Notes: UE = the share of the population unemployed; EMP = the share of the population in work; SCH = the share of the population in school and not in work. Standard errors are in parentheses.

Table 10.4 **Regression results on the direct effect between labor force participation of older workers and employment of younger workers (males and females separately, no controls)**

	Youth 16–24			Prime 25–54	
	UE	EMP	SCH	UE	EMP
Levels					
Men	–0.291	1.375	–1.096	–0.241	0.549
	(0.041)	(0.182)	(0.123)	(0.036)	(0.074)
Women	0.092	–0.362	0.724	0.098	1.030
	(0.020)	(0.131)	(0.078)	(0.019)	(0.080)
3-year lag on elderly employment					
Men	–0.240	1.312	–1.090	–0.219	0.529
	(0.047)	(0.185)	(0.113)	(0.040)	(0.076)
Women	0.095	–0.480	0.767	0.113	0.849
	(0.021)	(0.138)	(0.073)	(0.019)	(0.098)
5-year difference					
Men	–0.560	1.324	–0.514	–0.472	0.621
	(0.175)	(0.554)	(0.281)	(0.131)	(0.206)
Women	–2.304	2.363	–1.468	–5.216	1.348
	(0.165)	(0.431)	(0.490)	(1.827)	(0.151)
5-year log difference					
Men	–8.583	2.331	–1.448	–9.789	0.611
	(2.656)	(0.784)	(0.769)	(3.260)	(0.175)
Women	–3.513	2.323	–1.715	–6.291	1.007
	(1.197)	(0.263)	(0.333)	(1.237)	(0.139)

Note: See table 10.3 notes.

The first row shows the specification where the rates in levels have been used for both the dependent and the independent variables. As can be seen in the results of the upper panel in table 10.3, when excluding the controls, there is a positive and significant relation between the unemployment rate of the young and labor force participation of the old. This result is in line with the idea that the labor force participation of the old indeed crowd out employment possibilities for younger workers, resulting in a higher unemployment rate in this age group. The results for the other two outcome measures, employment rate and share in schooling, in this age group also give similar results. The results in table 10.4 show that relation can be attributed to the female subsample. For males, the results reveal a completely reversed relation, that is, that a higher labor force participation among older workers tends to decrease the unemployment rate among younger workers. The results also show that when we add controls to the specification, the significance of the pooled sample as well as the female subsample is lost. However, the inverse relation for the male subsample is robust for including controls.

The results for the prime aged age group are somewhat different. For the

Table 10.5 **Regression results on the direct effect between labor force participation of older workers and employment of younger workers (males and females separately, with controls)**

	Youth 16–24			Prime Age 25–54	
	UE	EMP	SCH	UE	EMP
Levels					
Men	–0.501	1.622	–0.923	–0.474	0.761
	(0.112)	(0.444)	(0.257)	(0.094)	(0.174)
Women	0.214	0.600	0.166	0.112	1.755
	(0.149)	(0.823)	(0.502)	(0.142)	(0.351)
3-year lag on elderly employment					
Men	–0.391	1.483	–0.938	–0.438	0.726
	(0.169)	(0.626)	(0.349)	(0.142)	(0.252)
Women	0.338	–1.638	1.248	0.346	0.080
	(0.080)	(0.446)	(0.246)	(0.072)	(0.264)
5-year difference					
Men	0.296	–1.650	0.822	0.224	–0.461
	(0.129)	(0.382)	(0.238)	(0.075)	(0.140)
Women	0.008	1.702	–0.577	–0.097	2.000
	(0.095)	(0.372)	(0.208)	(0.055)	(0.284)
5-year log difference					
Men	1.838	–0.835	1.033	3.895	–0.080
	(1.687)	(0.407)	(0.739)	(1.816)	(0.098)
Women	1.606	1.407	–0.879	–0.769	1.365
	(1.088)	(0.284)	(0.478)	(1.038)	(0.178)

Note: See table 10.3 notes.

pooled sample and the specification without controls, the results on the unemployment and employment rates as dependent variable are contradictory. The results in table 10.4 show that the result for unemployment, indicating a positive relation between the unemployment rate of the prime aged workers and the labor force participation rate of the older, can be attributed to the female subsample. Again, this result loses significance in both the pooled and the female subsample when controls are added to the specification. However, the positive relation between the employment rate among the prime aged and the labor force participation rate of the elderly applies in both the male and female subsamples and are robust to adding controls in all samples.

The second row in table 10.3 shows the results of the regression in levels, but when the independent variable, the labor force participation rate of the older workers, is lagged by three years. As for the previous set of results, there is a positive relation between the labor force participation of the old and the unemployment rate of the young that can be attributed to the female subsample. In the male subsample, the relation is reversed. In this specification, the results are generally robust for including controls.

Any causal relation between the labor force participation of the old and unemployment of the young is likely to show up if we relate changes, rather than levels, that is, the following model:

$$(2) \qquad \ln U_{\text{young},t+1} - \ln U_{\text{young},t} = \alpha + \beta(\ln \text{LFP}_{\text{old},t+1} - \ln \text{LFP}_{\text{old},t}) + \delta(\ln X_{t+1} - \ln X_t) + \varepsilon_{t+1} - \varepsilon_t.$$

We use five-year lags and show results from levels as well as logged data.

For the differenced data, the results indicate complimentarity between the labor force participation of the old and employment of the young or prime aged. This applies for the specifications without controls for both the male and female subsamples. However, the statistical significance of the results is, in most cases, lost when controls are included in the specifications. In some cases, the sign is reversed and still significant when controls are included in the male and female subsamples.

10.6 Conclusions

As in most other industrialized economies, there has been a gradual decrease in the labor force participation of older male workers in Sweden since the beginning of the 1960s. At the same time, the income security system has gradually become more generous, primarily through the introduction and maturity of the income-related national supplementary pension system (ATP) and more generous eligibility rules in the Disability Insurance program. It has been hypothesized that the access to the more generous income security system for older workers could explain the development toward a lower labor force participation in this group. In this paper, we have tried to get empirical support for this hypothesis. Moreover, we have tried to link the labor force participation rate among older workers to the employment rate among younger workers.

On some aspects, we have found empirical support for a relation between the development of the income security system and labor force participation rates among older workers. First, the changes in the normal retirement ages did have an apparent effect on the labor force participation rates of workers older than age sixty-six. Second, the more generous eligibility rules in the Disability Insurance program and the opening of the possibilities to be awarded Disability Insurance for labor market reasons seem to have an effect on the labor force participation rate in the group aged between sixty and sixty-four. Third, the stricter eligibility rules in the Disability Insurance in the beginning of the 1990s did at least affect the inflow to the Disability Insurance program although it is unclear if it in the end affected the labor force participation rates among the older workers.

On the other hand, we did not find unambiguous empirical support for the hypothesis that the more generous pension benefits in the national system did have an effect on labor force participation rates. Although there are rela-

tively few who claim old age pension benefits before the normal retirement age, the more generous benefits may have affected the inflow to the Disability Insurance. If this was the case, however, we would have witnessed an increase in this inflow much earlier, already in the beginning of the 1960s, than in the early 1970s when it actually happened.

On the second research question, to what extent a high labor force participation rate among older workers tends to "crowd out" employment possibilities for the younger, we find no empirical support for this being the case. On the contrary, most of the empirical results suggest a positive relation between labor force participation of older workers and employment of the young.

There are at least two reasons to believe that regression models where the labor force participation is used as explanatory variable and different measures of employment of younger workers as dependent variable will give biased results. First, there may be a spurious regression effect through unmeasured business-cycle effects driving both higher labor force participation rates among the older workers and lower unemployment rates among young workers. Second, for at least some eras covered by the period under study, a secular trend toward higher female labor force participation and a trend toward higher youth unemployment may have affected the results.

The different sources of potential bias go in different directions, and the labor force trends differ for men and women. To resolve this, which calls for further research, some form of exogenous variation in labor force participation is needed.

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