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Chapter Author(s): Takashi Oshio, Satoshi Shimizutani

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Disability Pension Program and Labor Force Participation in Japan An Historical Perspective

Takashi Oshio and Satoshi Shimizutani

11.1 Introduction

In Japan and other developed countries, disability pension programs commonly have a long history in public pension programs. The Japanese disability pension program, which started in 1944, has gradually expanded over several major revisions and has contributed to improving the living standards of the disabled. Indeed, the eligibility criteria have been generally eased, and the number of program recipients has shown a trend of modest increase. In contrast to some European countries (Börsch-Supan 2005), however, the disability pension program is rarely related with labor force participation (of the elderly) in Japan.

However, the fact that the disability pension program has so far been unlikely to be detrimental to labor force participation in Japan does not imply that the disability pension *will not be* relevant for retirement decisions in Japan. Indeed, the number of recipients of disability pension benefits has increased in recent years. It has been established that the aging population in Japan is growing at a remarkable speed, and the proportion of the elderly aged sixty-five and over in the total population had reached 20 percent in 2005 and will reach 30 percent in 2025 and approximately 40 percent in

Takashi Oshio is professor at the Institute for Economic Research, Hitotsubashi University. Satoshi Shimizutani is a senior research fellow at the Institute for International Policy Studies.

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2050 (National Institute of Population and Social Security Research 2006). In the future, together with the historically lower fertility rate, population aging will cause a decline in the numbers of the labor force, and the situation might be exacerbated by expanding disability program participation. From this aspect, it is worthwhile to investigate the reason for the low take-up rate in Japan, focusing on a distinction between institutional aspects (i.e., tight eligibility conditions) and noninstitutional ones (i.e., better health conditions), which have not been sufficiently explored in Japan.

To this end, this chapter utilizes historical information to explore the relationship between the disability pension program and labor force participation in Japan. In particular, we examine the time series data to identify what has determined the trend in disability program participation. Specifically, this chapter performs twofold analyses to separate institutional factors from noninstitutional factors accounting for program participation.

First, we provide historical information on mortality and health status measures in Japan. A change in health status is sure to affect participation in disability insurance programs even without any revisions. Hence, understanding the trends in health status over time is critical to distill the effect of health conditions on the program participation. This task is not easy, however, because there is no “true” measure of health status. Thus, we must explore, over time, the relationships among representative measures of health, mortality rates, and subjective health status.

Second, we attempt to understand the relationship between changes over time in the disability program and program participation. We identify three major revisions of the program in the postwar period and examine the relationship between these changes and the program participation rate so that we identify how trends in the disability program have been related with institutional revisions.

Our discussion proceeds as follows. Section 11.2 provides a historical overview of the disability program in Japan, focusing on major revisions that are to be examined in later sections. Section 11.3 investigates historical representative data on health status, that is, mortality, subjective health status, and other measures and relates them with each other in Japan. Section 11.4 describes the development of labor force participation, examines the relationship with program revisions, and quantifies the effect of the disability program revisions on “activity” measured by labor force participation rate. The last section concludes.

11.2 Disability Program and Other Social Security Program Reforms

11.2.1 Historical Overview

This section gives an overview from an historical perspective of the disability program and other related reforms to the social security program

in Japan. At the outset, we need to clarify that what is often referred to as the “disability insurance (DI) program” in other countries corresponds to the “disability pension program” in Japan; the program was constructed in the public pension scheme, and all revisions to the disability program have been linked to those to the core pension programs. Among several programs to assist the disabled, the disability pension plays the most important role in terms of income compensation; therefore, we will focus on the description of the disability pension program and briefly mention related programs at the end of this section.

The Japanese public pension program consists of three programs: the Employees’ Pension Insurance (EPI, *Kosei Nenkin*), whose pensioners are private employees; the National Pension Insurance (NPI, *Kokumin Nenkin*), whose pensioners are self-employed or agriculture, forestry, and fishery cooperative employees; and the Mutual Aid Insurance (*Kyosai Nenkin*) covering employees in the public sector and private schools. In terms of the number of pensioners, the EPI and the NPI contribute to the total by slightly less than half, respectively, and the MAI occupies the remaining small portion.¹ We will describe in the following the revisions of the disability pension program over time, focusing on the EPI and NPI (see table 11.1).

When the EPI was launched in 1944 as the first social insurance style public pension program, it contained the disability pension program.² The initial program rated the disabled using two grades (Grade 1 and Grade 2) once qualified. The grading depended on functional ability to perform activities of daily living, rather than on loss of earning ability. Grade 1 referred to a condition in which a person was unable to perform activities of daily living (e.g., severe disability affecting both hands or complete blindness). Grade 2 referred to a condition in which a person faced very severe limitations in performing activities of daily living (any severe disability affecting either hand). We need to pay attention to the fact that the program insured persons with mental disorders from the beginning, via the EPI. The revision of 1954 introduced Grade 3 to cover more disabled persons with less-severe conditions than those in Grade 2.³

After establishment in the EPI, the disability pension program has expanded in some ways. To date, there have been four major revisions during

1. See Oshio, Shimizutani, and Oishi (2010) for a detailed description of the Japanese public pension program and its historical development.

2. A brief review of development of the disability pension program was provided by the Ministry of Health, Labour and Welfare (2009). The previous program of the EPI, which was called the “Workers Pension Insurance (*Roudou Sha Nenkin Hoken Seido*)” was launched in 1941 and covered only male and nonoffice workers. In 1944, the name of the program was changed to the EPI, and it began to cover office workers or females; this was very similar to the current system in terms of coverage.

3. The EPI had only a single layer of a wage proportional benefit before 1954 in the old-age pension program and was reconstructed to a double-tier structure (fixed rate part as the first tier and a wage proportional part as the second tier) in 1954. Even after 1954, however, the disability pension program had a single-tier structure until the 1985 revision.

Table 11.1 Development of disability pension program in Japan

	National Pension Insurance (self-employed, agricultural, forestry, and fishery sector)		
	Disability Pension (with contribution)	Disability Welfare Pension (without contribution)	Employees' Pension Insurance (private firm employees)
1944			Grade 1 and Grade 2 (including mental diseases)
1954			Grade 3 was added
1959	Grade 1 and Grade 2	Grade 1	
1964–1965	Covered mental diseases		
1974		Grade 2 was added	
1986–	Merged to Disability Basic Pension		Disability Basic Pension + wage proportional benefit

its development. We will consider them, focusing on who has been most affected in each revision. The first revision was the introduction of the NPI effective in 1961. The NPI began to insure those who were not covered by the EPI, that is, self-employed workers and agricultural, forestry, and fishery-sector workers. The introduction of the NPI was important, as it launched the universal pension system in the Japanese public pension program. The NPI drastically expanded the coverage of the disability pension program to more groups than just employees in the private sector. Unlike the EPI, the NPI had not covered mental disease at the time of its introduction.

The NPI had two types of disability programs for recipients with premium contribution and for those without. The first was the “Disability Pension Program (*Shogai Nenkin*),” which was designed for those who contributed the premium. The NPI was motivated by the spirit of social insurance and, thus, required the recipients to contribute the insurance premium to receive benefits. The second was the “Disability Welfare Pension Program (*Shogai Fukushi Nenkin*),” which was designed for those who did not make premium contribution. Eligibility to receive disability pension benefit was judged at the time of the first doctor’s visit to survey the extent of the disease that made the person disabled. Thus, those who had received the first visit before reaching the age of twenty (the minimum age for NPI participation is twenty) or before 1961 were not insured by the disability pension program under the NPI. They were covered by the disability welfare pension program, which was financed by the government. The eligibility for this program was means-tested, and the amount of benefit was lower than that of the disability pension program.

The second revision took place in 1974. It called for expanding the coverage for mental disease. The NPI began to insure mental disorders in 1964 and

mental deficiency in 1965.⁴ However, the coverage for mental disability was very limited. While those who paid the premium were eligible to receive the disability pension benefits once qualified as Grade 1 or 2 (note that there was no Grade 3 in the NPI), the disability welfare program insured the disabled only if rated as Grade 1. In 1974, the disability welfare program began to cover Grade 2 as well, and many patients with mental disorders or deficiencies became eligible to receive the benefit.

The third revision was implemented as a part of the major revision of core public pension programs in 1985 (effective from 1986). This revision was most drastic in recent years, as it harmonized all the public pension programs into an integrated form (see Oshio, Oishi, and Shimizutani 2011). It reduced the benefit multiplier and flat-rate benefit in the old-age pension program for the first time, aiming to restrain an increase in total pension benefits. Three revisions were implemented with respect to the disability pension programs.

First, a double-tier structure was introduced. The NPI pensioners, both with and without premium contributions, were entitled to receive (a) the flat rate “Disability Basic Pension (*Shogai Kiso Nenkin*)” benefit as the first tier, which was linked to the Basic Pension Benefit, and (b) the wage proportional “Disability Employees’ Pension (*Shogai Kosei Nenkin*)” program as the second tier. The Disability Welfare Pension, which was funded by the government before the revision, was replaced by the Disability Basic Pension, which was funded by the government and premium contributions of the NPI pensioners.

Second, the benefits for the disabled without premium contribution were raised to be at the same level as those for the disabled with premium contribution in the NPI. Both groups of the disabled were entitled to receive the same Disability Basic Pension benefit, and the amount doubled for the recipients of the disability welfare pension benefit. This is a remarkable revision for those who received the disability welfare pension, given that the 1985 revision reduced old-age pension benefits in general.

Third, grading of disability conditions was harmonized across programs. Before the revision, there was disparity in qualification criteria for the disabled even if the disability condition was the same. However, even after the harmonization of the grading, the Disability Basic Pension covered the disabled only in Grades 1 and 2. The EPI program covers the disabled in Grade 3, too, and provides “disability compensation” for a disabled pensioner with a disability less severe than Grade 3 if the disabled condition is fixed.⁵

4. In 1966, the NPI began to cover all diseases including liver and kidney diseases among other internal disorders.

5. Because the EPI pensioners were required to join the NPI in the 1985 reform, the entitlement to receive disability pension became contingent on the grading of the NPI (Disability Basic Pension), even if a disabled person had been approved to receive disability pension benefits in the EPI or MAI program. The MAI program has a Grade 3 as well.

Last, the government allowed the Disability Basic Pension recipients aged sixty-five years or above to additionally receive EPI benefits if they had made any EPI contributions in the past. This revision became effective as of 2006, most probably providing the elderly with incentives to apply for disability pension benefits.

In sum, the disability pension programs in Japan have a long history starting in 1944. The disability pension program for private firm employees (EPI pensioners) was introduced relatively early and was generous in that it covered mental diseases as well as patients who were less severely disabled. The coverage of the disability pension has expanded. From 1961, NPI pensioners were entitled to receive the disability pension benefits, a move that included the self-employed. From 1974, the disabled without premium contribution were entitled to receive the benefits if rated as Grade 2, thus including many persons who were mentally deficient or had mental disorders. From 1986, the disabled without contribution were entitled to receive the disability basic pension benefit, which was same as for those with contribution. Finally, the Disability Pension Benefit recipients with any EPI contributions were entitled to additionally receive EPI benefits in 2006.

Despite the domestic expansion, however, the size of the disability pension benefit is still relatively small in terms of economic size and public expenditure from an international perspective. According to Organization for Economic Cooperation and Development's (OECD's) Social Expenditure Database, the share of the expenditure on disability pension benefits out of gross domestic product (GDP) was 0.3 percent in Japan in 2005, much lower than that in Denmark, Sweden, and the United Kingdom, which register about 2 percent. Further, the share of the expenditure on disability pension benefits out of total public expenditure is about 2 percent, which is again much lower than that in other countries.

11.2.2 Current Scheme

Under the current scheme, a person who visited a doctor for the first time for consultation about the cause of the disability when he or she was under the age of twenty or when he or she was an NPI pensioner is entitled to receive the Disability Basic Pension benefit. Note that there is no limitation in terms of age for receiving disability pension benefits, unlike in some other countries where the recipients of disability pension benefits are converted to eligibility to receive old-age pension benefits after attaining the eligible age (i.e., age sixty-five). The formula to compute the benefit is as follows.

Grade 1 = Basic Pension benefit \times 1.25 + additional benefit for dependent children.

Grade 2 = Basic Pension benefit + additional benefit for dependent children.

The amount of the Basic Pension benefit is 792,100 yen per year, and the additional child benefit is 227,000 yen each for the first and second children and 75,900 yen each for the third and subsequent children.

In addition to the Disability Basic Pension, a person who consulted a doctor to identify the cause of the disability when he or she was an EPI pensioner is entitled to receive wage-proportional Disability Employees' Pension benefit or Disability Mutual Aid Pension benefit (for the MAI recipients). The formula to compute the benefit of the second tier is as follows.

Grade 1 = Wage proportional benefit \times 1.25 + additional benefit for a spouse.

Grade 2 = Wage proportional benefit + additional benefit for a spouse.

Grade 3 = Max [wage proportional benefit, 594,000 yen].

The amount of additional benefit for a spouse is 227,900 yen per year.⁶

Figure 11.1 reports the number of the recipients who received the disability pension benefits between 1970 and 2006.⁷ The data source is the *Annual Report of Social Security Administration (Shakai Hoken Jigyo Nenpo)* published by the Social Security Agency. Unfortunately, there is no data available by gender or age. The number of recipients was about 0.5 million in 1970 and increased to 2.0 million in 2006; it expanded four times over thirty-six years. As seen from the figure, the dominant recipients are the NPI pensioners, who share about 80 percent of the total. Because most of them are self-employed, their labor supply is less likely to be associated with the generosity of the disability pension program and its institutional changes. In contrast, the EPI recipients have occupied less than 20 percent of the total. As discussed in the following, their labor supply is likely to be affected by institutional changes in eligibility of the disability pensions, but their proportion is relatively small. Finally, the number of MAI pensioners to receive the disability pension, who are also likely to be affected by institutional factors, has been very small, 2 to 3 percent in all years.⁸

The impact of past revisions to disability pension programs on DI participation are illustrated more clearly in figure 11.2, which shows the growth rate of disability pension recipients. We observe three jumps: in 1974 to 1975, 1985 to 1986, and 2005 to 2006. As described in section 11.2.1, the 1974 revision added a Grade 2 level for the NPI Disability Pension program. The 1985 revision raised the benefit for the NPI pensioners without premium contributions (i.e., Disability Welfare Pension recipients) to the level for

6. Momose (2008) used the purchasing power parity to compare the amount of benefits in Japan with that in the United States and Sweden. While the amount of benefits of the disability employee pension (Grade 1 or 2) is larger than that in the United States and Sweden, that of the disability basic pension (Grade 1) is much smaller and that for Grade 2 is half of the standard benefit in the United States and Sweden.

7. The fiscal year starts in April and ends in March in Japan. The figures are measured as of the end of the fiscal year.

8. The number of MAI pensioners to receive the disability pension is not available; that of MAI pensioners eligible to receive the benefits is available in the *Annual Report on Social Security Statistics (Shakai Hoken Tokei Nenpo)* compiled by the National Institute of Population and Social Security Research. We compute that the number of MAI pensioners to receive the disability pension, assuming the proportion of those to receive out of those eligible, both of which are available in the *Annual Report of Social Security Administration*, is the same for the EPI and the MAI programs.

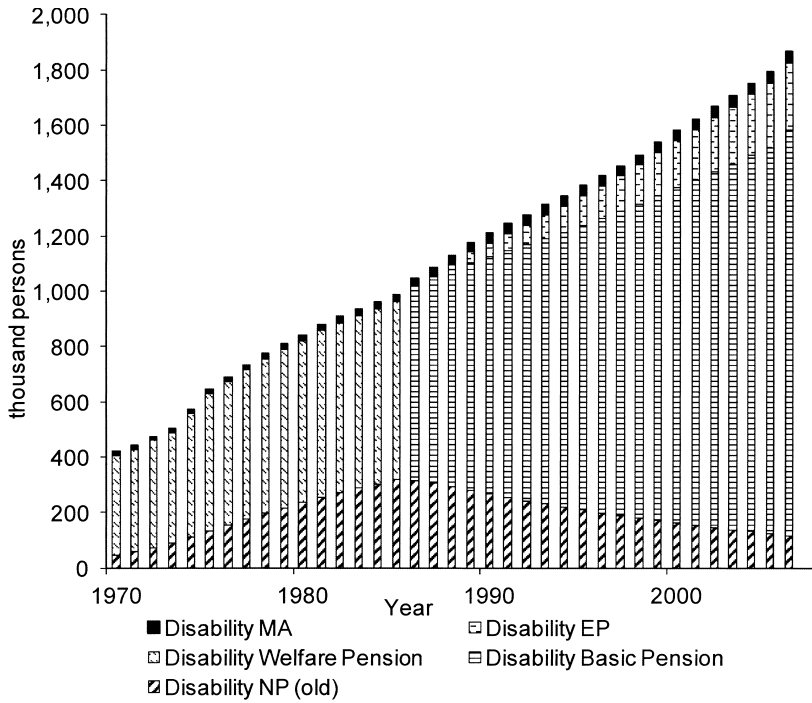


Fig. 11.1 The number of recipients of disability pension benefits

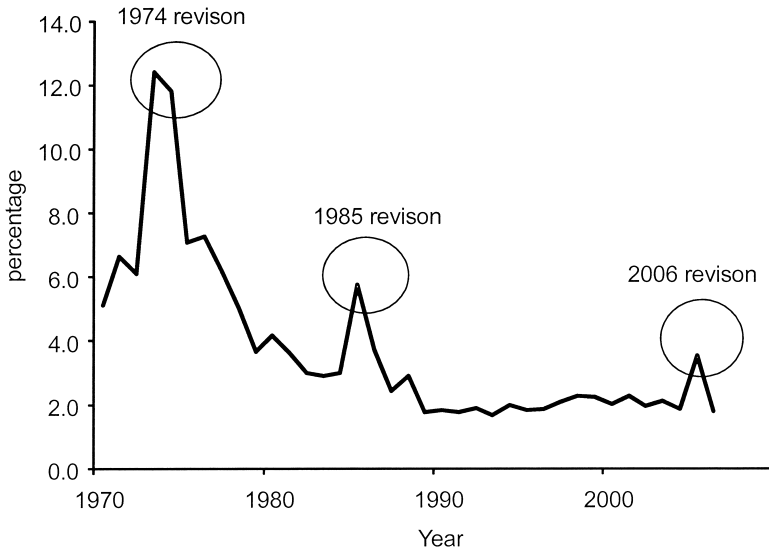


Fig. 11.2 Growth rate of disability pension recipients

those with contribution. Finally, the 2006 revision allowed Disability Basic Pension recipients to receive the EPI benefit as well if they had made EPI contributions. These jumps, albeit with limited impact on the total labor force, confirm that the DI participation is affected more directly by institutional changes than they are by changes in health status.

11.2.3 Other Programs for the Disabled

In addition to the disability pension, there are some other programs to assist the disabled. One is employers' compensation for employees who were injured, diseased, disabled, or killed during work-related activities, including a disaster while commuting. Even a firm employing one employee is required to join the insurance scheme by law at the firm's cost. The benefits include compensation for the treatment, labor in absence, and a disabled status after a treatment as well as benefits for family members if the employee is killed. While the employers' compensation covers the mentally disabled, the eligibility is very limited, and the number of those approved for the mentally disabled benefit, which is relevant to the rapid increase in the number of the recipients of the disability insurance in Europe, has been small.⁹

Another program is public assistance. While eligibility does not require a disabling condition to receive public assistance, the proportion of those who receive public assistance is larger for the recipients of the disability pension, suggesting that the disability pension benefits are not sufficient to compensate for the minimum living standards. This is particularly the case for those with mental disorders, and the share of the disabled to receive public assistance has increased for the physically disabled and those with mental disorder.¹⁰

11.3 Historical Data on Health

This section reviews some long-term time series data on representative measures of health status. First, the trend of mortality in Japan is examined.

9. According to *The Current Condition of Work Disaster Compensation for Mentally Disabled (Seishin Shougai nado no Rousai Hoshou Jyokyo)* annually released by the Ministry of Health, Labour, and Welfare, the number of the approved was very small (nine between 1983 and 1996 [fourteen years]) but increased to 100 in 2002 and around 270 in 2007 or 2008 (<http://www.mhlw.go.jp/bunya/roudoukijun/rousaihoken04/090316.html>).

10. Momose (2008) remarked that 250,000 persons received an additional allowance (*Shougai Sha Kasan*) for the disabled among the public assistant recipients in 2006, and the number has substantially increased, compared to 100,000 in the mid-1990s. According to a survey by the Tokyo Metropolitan Government (*Shougai Sha no Seikatsu Jittai*), the proportion of the recipients of public assistance is 6.4 percent (in 2003 and 7.0 percent in 2008) for the physically disabled, 3.4 percent (in 2003 and 2.7 percent in 2008) for the mentally retarded, and 25.7 percent (in 2003 and 31.0 percent in 2008) for those with mental disorders, all of which are larger than the average proportion of the public assistance recipients. The high proportion of the mentally disabled is accounted for by the low employment rate, the high rate of remaining single, and the high rate of nonrecipients of pension benefit.

Second, another measure of health status, a subjective health status is used to describe the development of health status in Japan. Third, we will relate the two measures—mortality and subjective health status in Japan.

11.3.1 Mortality

Mortality trends are, of course, not identical with health status and, thus, with disability trends, but are probably the only historical measure available in Japan and that comparable with other countries. We present the mortality trends in three ways. Figures 11.3 and 11.4 illustrate the ages of equal mortality probability for males and females, respectively. The historical data on mortality by age and gender in every year from 1960 to 2007 is available in “Simplified Life Table (*Kan-I Seimei Hyo*).”¹¹ We set the mortality at age sixty and sixty-five in 1960 as the reference points in the base year and computed the corresponding figures in the subsequent years, assuming the mortality increases linearly with the ages. As seen in figure 11.3, for males, the mortality at age sixty in 1960 corresponds to that at age 71.1 in 2007 (11.1 years extension), and the mortality at age sixty-five in 1960 does so to that at age 75.6 in 2007 (10.6 years extension). Those results show that the mortality in Japan drastically declined over fifty years. Figure 11.4 reveals that the extension is more remarkable for females. The mortality at age sixty in 1960 corresponds to that at age 74.0 in 2007 (14.0 years extension), and the mortality at age sixty-five in 1960 does so to that at age 78.1 in 2007 (13.1 years extension). On a closer look, it can be observed that the tempo of extension for males has accelerated in the 1970s and has become slightly stagnant in the 1990s. A similar pattern is observed for females, too, but the weak trend in the 1990s is less evident.

Figure 11.5 presents the mortality trends in a different manner. It shows the two-year mortality rates by age and gender in 1960 and 2005. If we take the 5 percent level of morality, the corresponding age for males in 1960 and 2005 was 68.7 and 78.9, respectively, while that for females in 1960 and 2005 was 72.5 and 84.0, respectively. The gap in the two years is larger for males probably because the starting age in the initial year is lower than that for females. This figure also demonstrates that the mortality rate has substantially declined over forty-five years.

Figures 11.6 and 11.7 report the mortality rates at ages fifty-five, sixty, and sixty-five in every year for males and females, respectively. This again shows that the mortality rate has declined over half a century. The mortality has been monotonically declining and has always been lower for females than it has been for males. As observed in figure 11.5, the decline in the male mortality rate is greater in the 1970s but slower in the 1990s, while that for the female mortality rate is linear.

11. Unfortunately, data are available only for every five year since 1995. We interpolated a linear trend for the five years to obtain the data in every year.

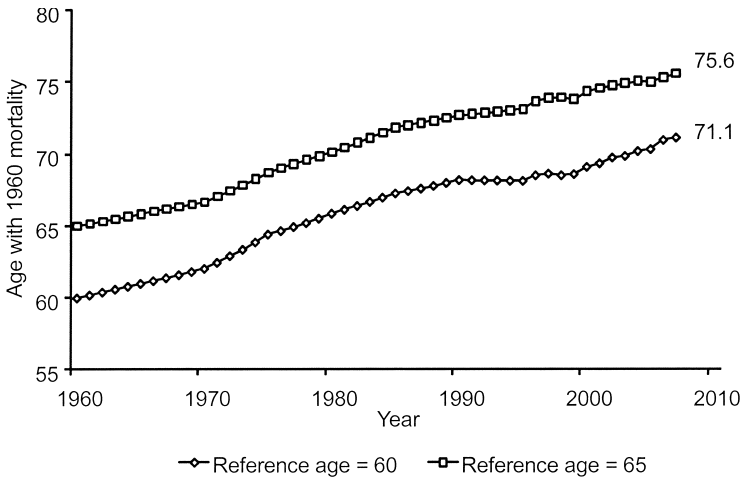


Fig. 11.3 Ages of equal mortality probability for men

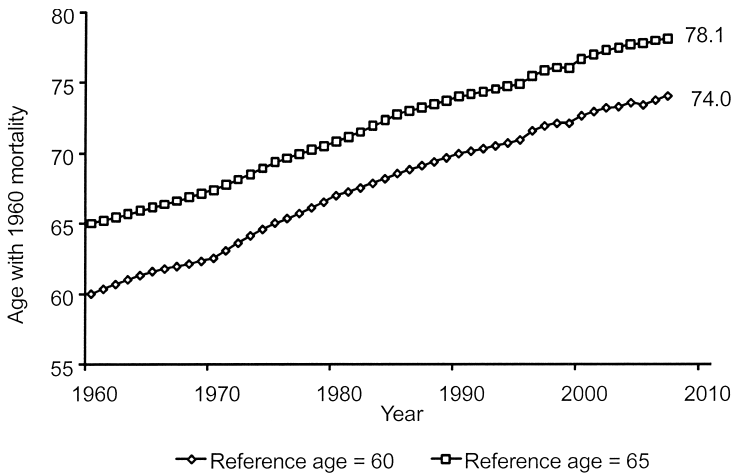


Fig. 11.4 Ages of equal mortality probability for women

11.3.2 Self-Rated Health

Next, we move on to discussing other health measures. A representative measure of health status is a self-rated health status, which has been widely used to stand for the state of progress of the condition. While there are some critiques for the measure because of its subjective nature, it is accepted as a popular aggregate health measure that is easily obtained at a low cost. A standard version of self-reported health status is the North American version with five answer categories ranging from “excellent” to

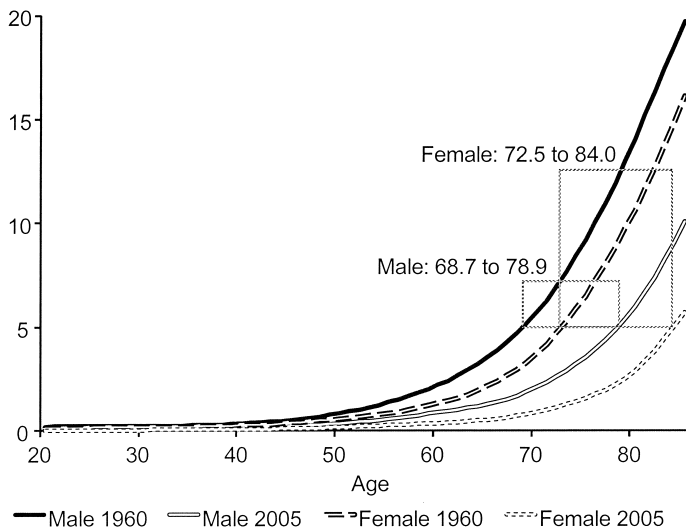


Fig. 11.5 Two-year mortality rates by age and gender, 1960 and 2005

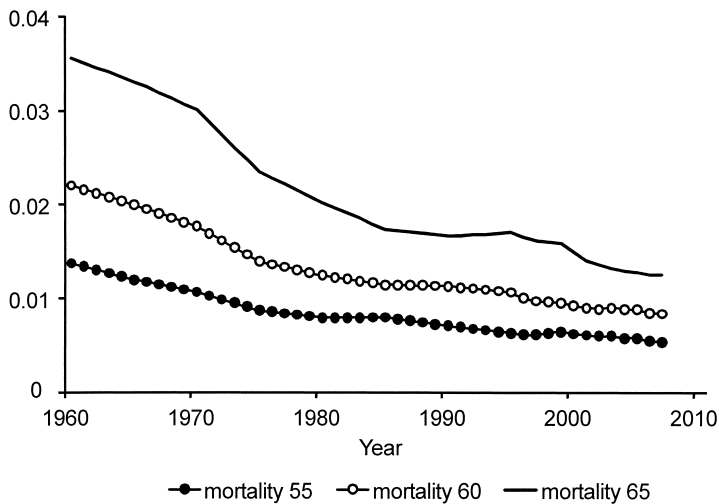


Fig. 11.6 Male mortality

“poor.” Another is the European version with five answer categories ranging from “very good” to “very poor.” The North American version is more popular and employed in some large data sets in Japan, including the Comprehensive Survey of Living Conditions of People (CPSLCP) compiled by the Ministry of Health, Labour, and Welfare starting in 1986 and JSTAR (Japanese Study of Ageing and Retirement), which is internationally com-

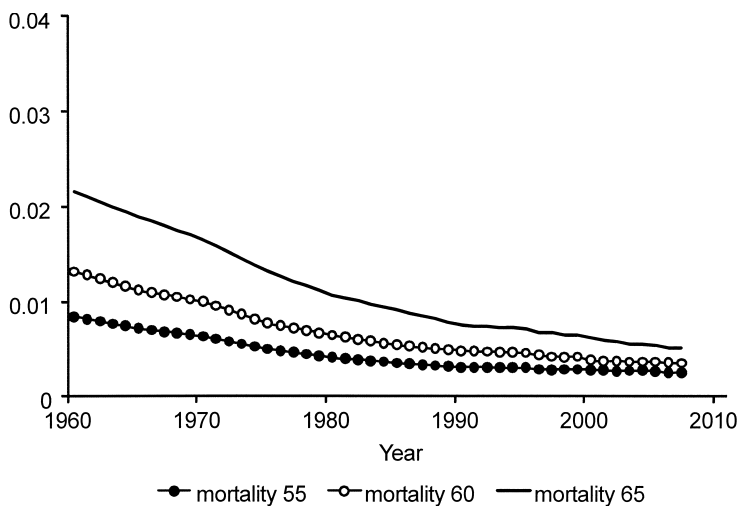


Fig. 11.7 Female mortality

parable to the Health and Retirement Study-English Longitudinal Study of Ageing-Survey of Health, Ageing and Retirement in Europe (HRS-ELSA-SHARE; Ichimura, Hashimoto, and Shimizutani 2009), starting in 2007. We utilize the data of self-rated health on a five-point scale from the CPSLCP—“excellent,” “very good,” “good,” “fair,” and “poor.”

Figures 11.8 and 11.9 illustrate the developments of the self-rated health status in males and females, respectively—the shares of those assessing their health conditions “excellent” or “very good” and those assessing them as “very good” or “good”—as well as the shares of respondents reporting subjective symptoms and of those who visit a hospital or clinic among those aged fifty-five to sixty-four (per thousand persons), along with the mortality rate for the same age group over the period between 1986 and 2007. The CPSLCP began in 1986 and is performed every three years. While the mortality rate has been steadily declining, the share of those reporting good health increased up to the middle of the 1990s, although it has displayed a declining trend to date. With no clear trend observed from the other two health measures, it suggests that there is a negligible relationship between the health measure and the decline in mortality.

11.3.3 LFP and DI versus Mortality

This section examines the relationship between LFP and DI in comparison to mortality. To this end, we first collected data of the number of DI recipients by age group and gender from the Review of Public Pension Finances (*Zaisei Saikaisan*), which the Ministry of Health, Labour, and Welfare releases almost every five years. Next, we linearly interpolated the

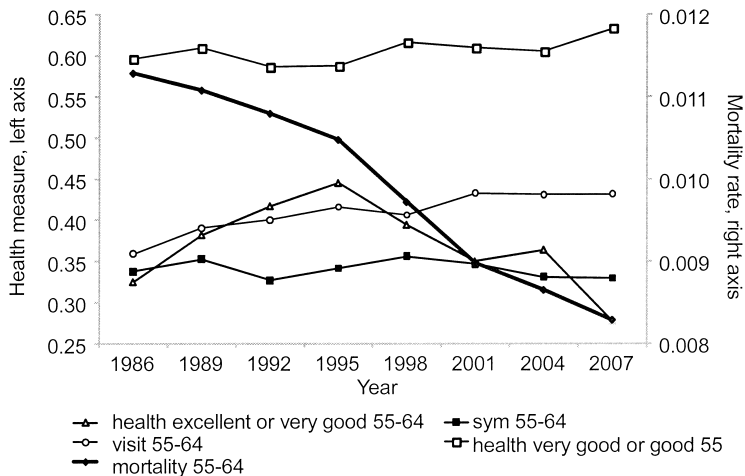


Fig. 11.8 Male health measures and mortality

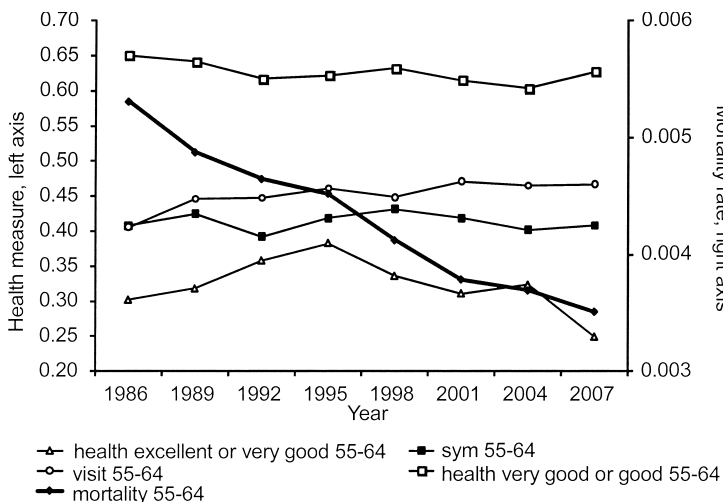


Fig. 11.9 Female health measures and mortality

figures for other years with some adjustment.¹² Figures 11.10 and 11.11 show the trends of employment and disability along with the mortality rate for

12. In the Review of Public Pension Finances, the number of recipients by age and gender for EPI pensions is available in 1979, 1983, and 1986 and that of the eligible is in 1991, 1996, 2001, and 2007. We use the shares of the recipients (or the eligible) by gender and age group (multiplied by the total number available in the Annual Report on Social Security Administration) to estimate the number of the recipients in those years. We assume that the shares for MAI pensioners are identical with those of EPI pensioners. The number of recipients of NPI

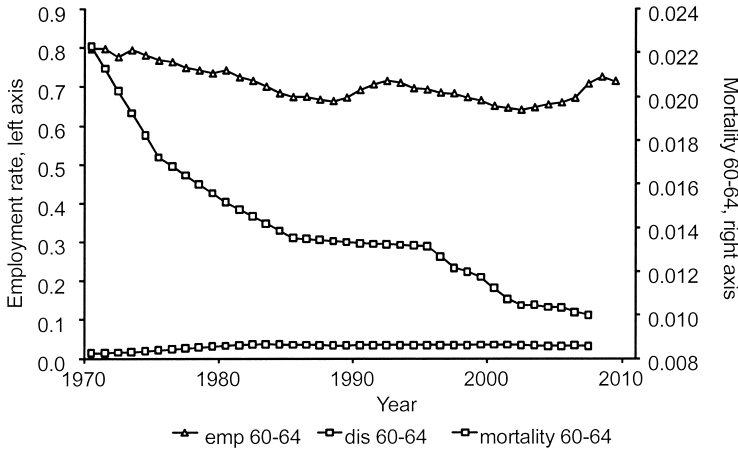


Fig. 11.10 Male employment versus mortality versus disability, aged sixty to sixty-four

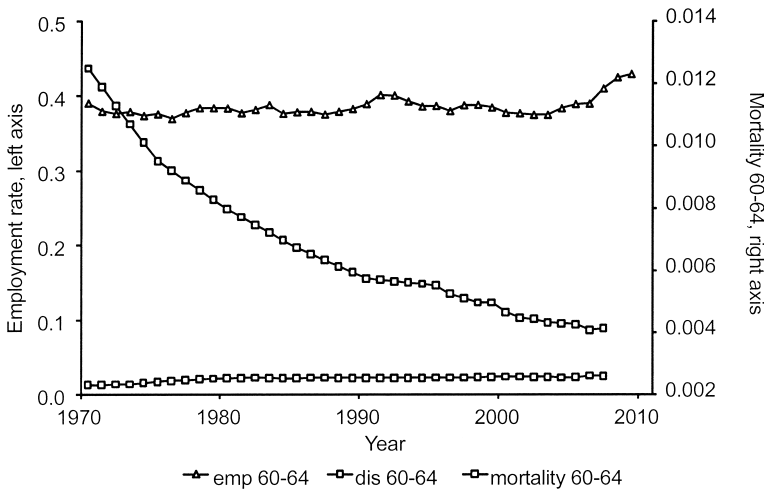


Fig. 11.11 Female employment versus mortality versus disability, aged sixty to sixty-four

those aged sixty to sixty-four for males and females, respectively. While the mortality rate has been declining steadily, the trend of the employment rate has been slightly downward for males and almost flat for females, with some

pensioners under the old program before 1985 is available in 1978, 1981, 1986, 1991, 1996, 2001, and 2007 and those under the new program after 1985 in 1986, 1991, 1996, 2001, and 2007 (the number of the eligible instead of the number of recipients since 1991 for both). We applied the same method to compute the number of recipients in those years. After those computations, we performed linear interpolation.

cyclical movements for both. More important, the share of DI recipients has remained very low for both males and females, albeit with a slight upward trend, and had no clear comovements with the employment rate and the mortality rate.

Figures 11.12 and 11.13 show the relationships between the employment rate and age and between the employment rate and mortality risk for males, where mortality risk is one-year mortality rate at a given age. The employment rate by age declined slightly from 1980 to 2005 but that by mortality risk declined more substantially. More specifically, the employment rate was 50 percent at an approximate age of seventy in 1980 and at an approximate

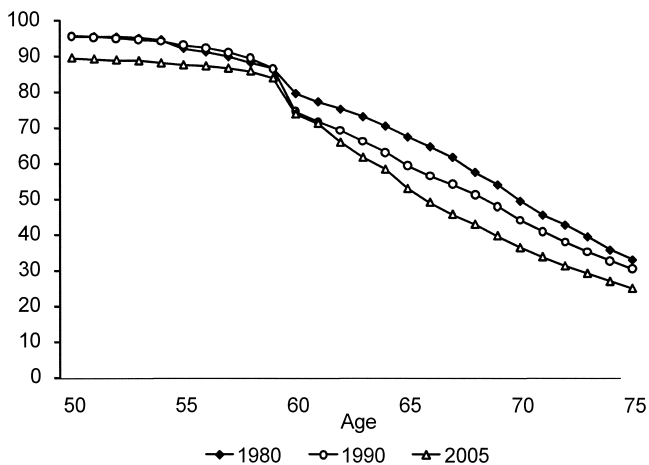


Fig. 11.12 Male employment rate by age

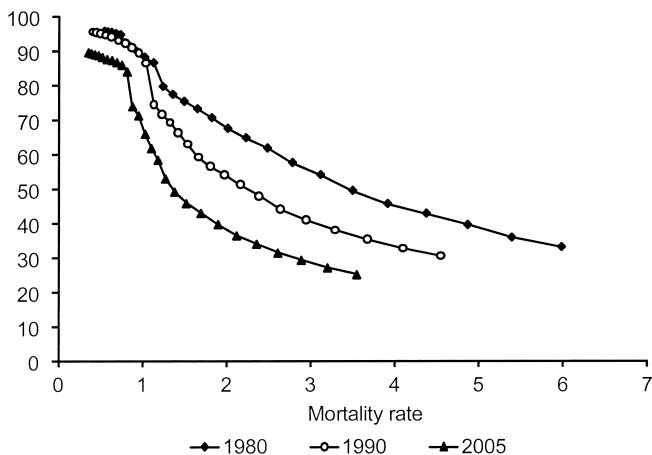


Fig. 11.13 Male employment rate by mortality risk

age of sixty-six in 2005, while it was 50 percent at the mortality rate of about 3.5 percent in 1980 and only about 1.4 percent in 2005. Although the mortality rate declined substantially over the past twenty-five years, the elderly have become more inclined to retire. See figures 11.14 and 11.15 for females. The employment rate by age shifted upward up to age sixty and remained almost unchanged beyond that between 1980 and 2005. The mortality-employment curves skewed to the vertical axis, and the level of the mortality rate that corresponds to a 50 percent employment rate stayed approximately 0.5 percent over the same period.

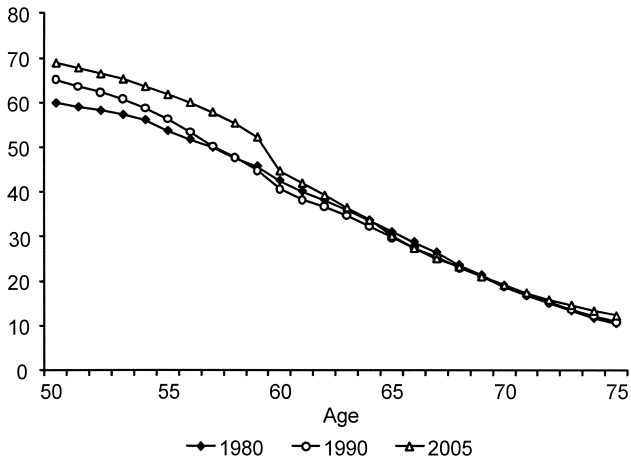


Fig. 11.14 Female employment rate by age

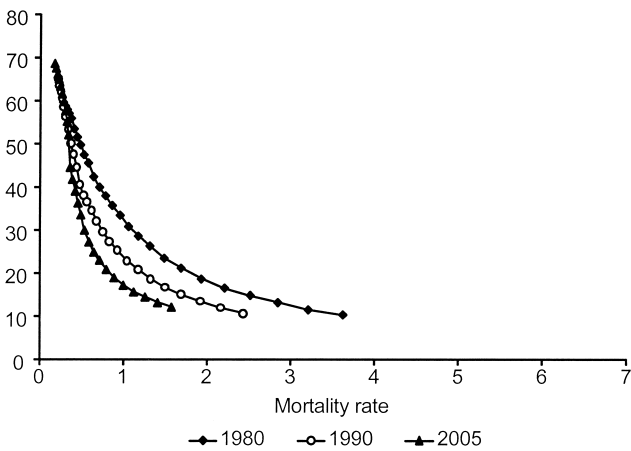


Fig. 11.15 Female employment rate by mortality risk

11.4 Historical Data on Activity and Program Participation Rates

This section explores the historical relationship between labor force participation and disability pension programs.¹³ The goal is to assess the effect of each revision in the disability pension program on the labor market by discovering trends that may be explained by the revisions.

11.4.1 Historical Labor Force Data

Figures 11.16 to 11.21 examine the long-term trends in the labor force, focusing on the rates of employment, unemployment, and not being in the labor force for three age groups: forty to forty-four, fifty to fifty-four, and sixty to sixty-four over 1970 to 2010 for males and females. For males, the employment rate shows cyclical movements with a slightly downward trend for those aged sixty to sixty-four, while it has remained stable at a high level for the younger two age groups. Correspondingly, the oldest age group shows clearer cyclicity of the rates of those unemployed and of those not in the labor force as compared to the other age groups. For females, the rates of those employed and of those not in the labor force show a modest uptrend and downtrend, respectively, for the two younger age groups, while they are stable for those aged sixty to sixty-four. The unemployment rate has been moving almost the same way across age groups.

11.4.2 Historical DI Data

Figures 11.22 and 11.23 present long-term trends of the shares of DI beneficiaries in total population for three age groups: forty to forty-five, fifty to fifty-four, and sixty to sixty-four for males and females, respectively, between 1970 and 2010. The figures also indicate the three major revisions in 1974, 1986, and 2006. We observe that the share of DI recipients has been modestly increasing for all the age groups in both males and females, though the share remains low. For males, the share is 1 to 2 percent for those aged forty to forty-five, whereas that for those aged fifty to fifty-four and sixty to sixty-four increased from 1 to 2 percent in 1970 to 3 to 4 percent in 2010.

Taking a closer look, we see that there are small jumps in 1974 to 1975, 1985 to 1986, and 2005 to 2006—albeit not for all age groups—consistent with figure 11.2. All of them are caused by the revisions to disability pension programs. In particular, for both males and females aged sixty to sixty-four, we observe a remarkable increase in the DI beneficiaries following the 1975 revision and the jump in 2006. In 1974, the disability welfare program began to cover Grade 2 as well, and many patients with mental disorders or deficiencies became eligible to receive the benefit. The 2006 revision allowed Disability Basic Pension recipients aged sixty-five or above to additionally

13. It would be excellent if direct data were available on pathways to retirement, but, unfortunately, no such data are available in Japan.

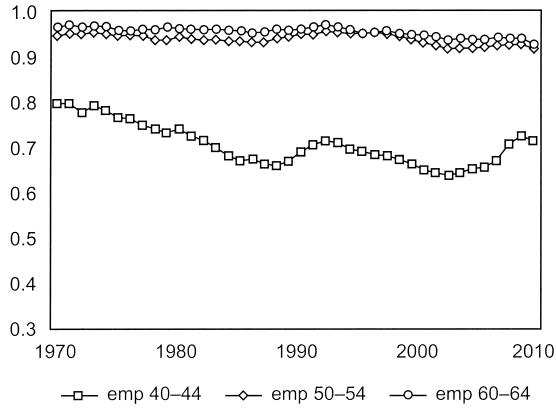


Fig. 11.16 Male employment

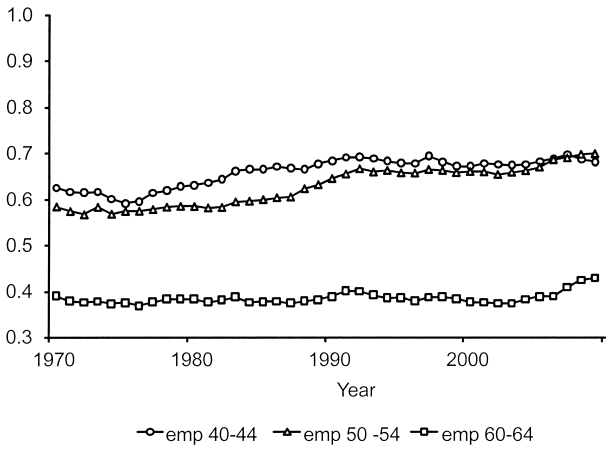


Fig. 11.17 Female employment

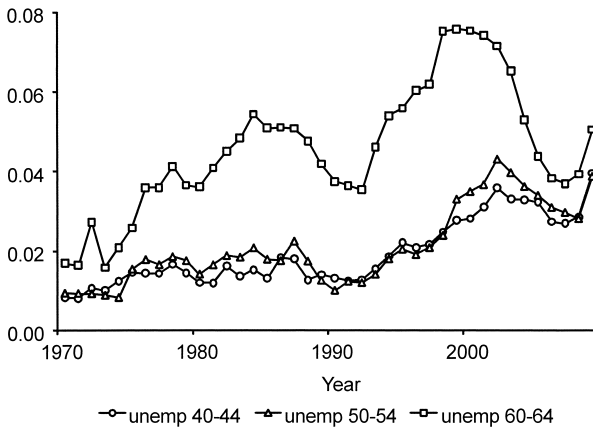


Fig. 11.18 Male unemployment

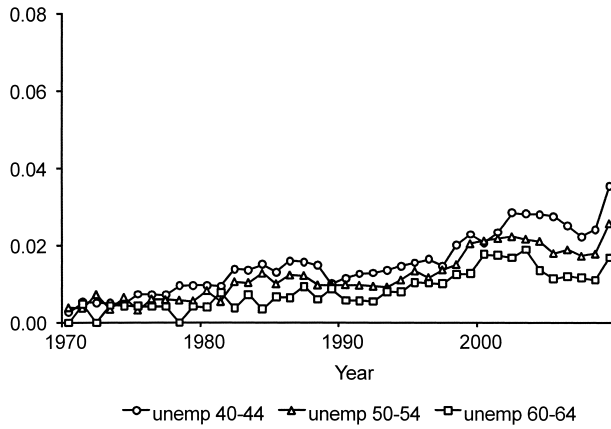


Fig. 11.19 Female unemployment

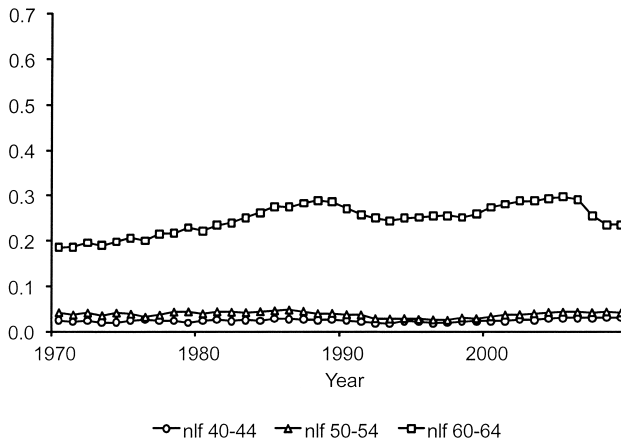


Fig. 11.20 Male not in labor force (NLF)

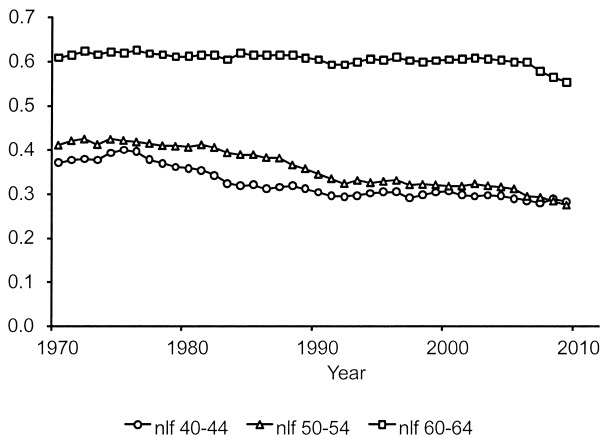


Fig. 11.21 Female not in labor force (NLF)

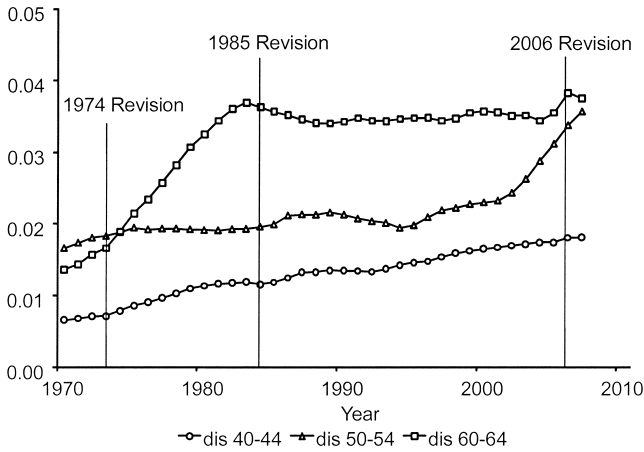


Fig. 11.22 Male not in labor force (NLF), disability

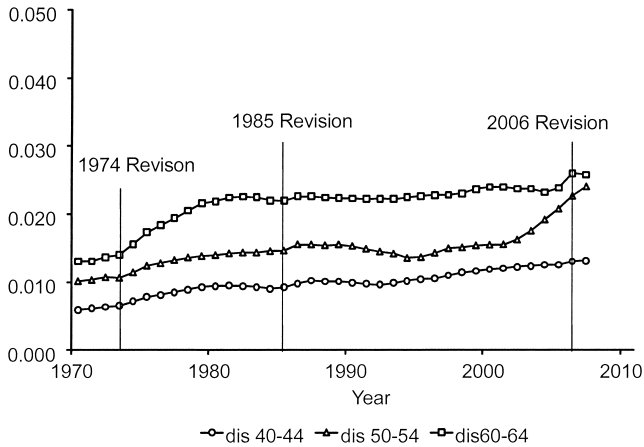


Fig. 11.23 Female not in labor force (NLF), disability

receive EPI benefits, providing the elderly with more incentives to apply for Disability Basic Pension. However, these trends in the DI participation rates are unrelated to those in the unemployment rates in all age groups (see figures 11.18 and 11.19), suggesting that there is no trade-off between DI and unemployment benefit receipts.

11.4.3 Historical Data on DI Participation versus Mortality and Health

Next, we try to relate the DI participation and health measures. Figures 11.24 to 11.27 present long-term trends in mortality at age forty-five and sixty and DI participation rates at ages forty to forty-four and sixty to sixty-four for males and females. It is clear that there is no reasonable relation

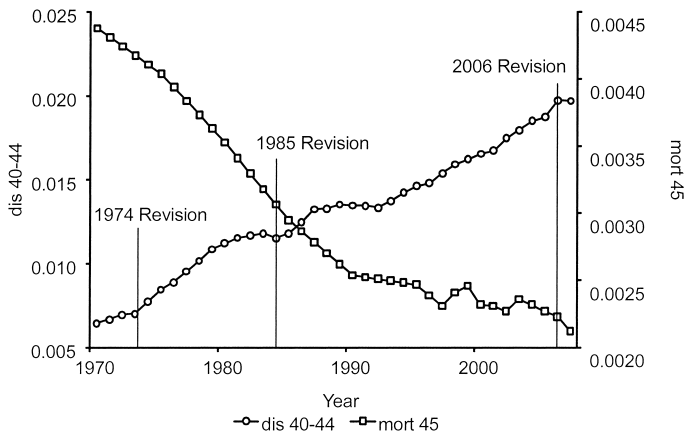


Fig. 11.24 Male mortality versus disability, aged forty-five

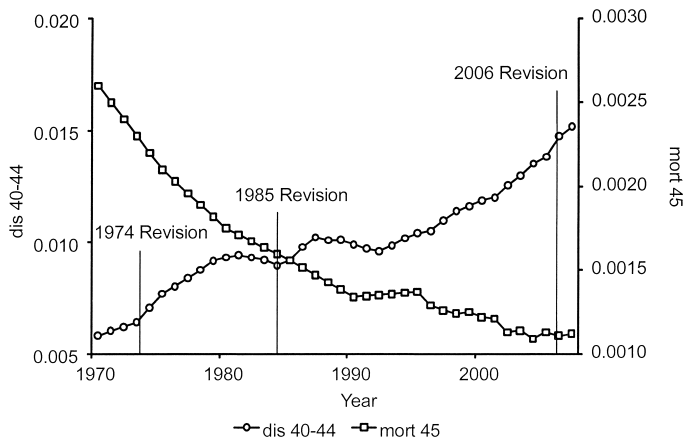


Fig. 11.25 Female mortality versus disability, aged forty-five

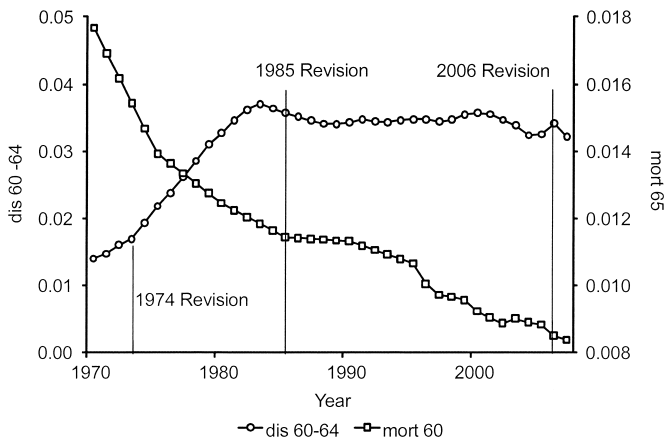


Fig. 11.26 Male mortality versus disability, aged sixty

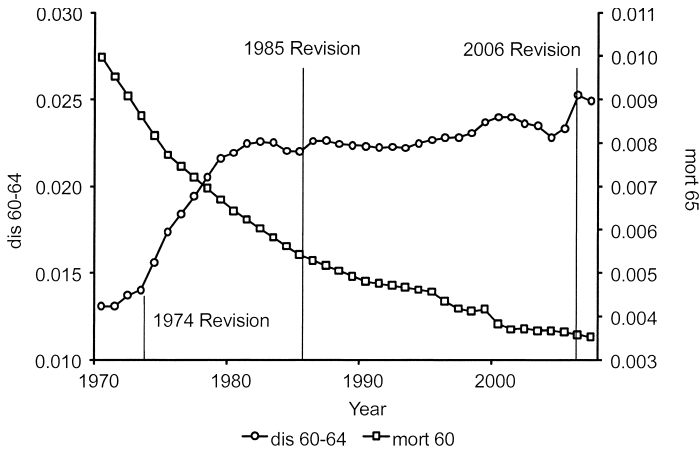


Fig. 11.27 Female mortality versus disability, aged sixty

between the two series in each figure. Instead, we observe a contradicting pattern: the DI participation rate has increased despite the lower mortality implying that people have become healthier. Figures 11.24 to 11.27 show that there are two small bumps in the DI participation rate after the 1974, 1985, and 2006 revisions, which are evident for males aged fifty to fifty-four and sixty to sixty-four. In contrast, there is no jump in the mortality rate in the same period, reinforcing the idea that the small increases in the DI participation rate were motivated by the DI program revisions. This justifies the observations that there is no discontinuity in the DI participation rate after some disturbances in the mortality rates in the second half of the 1990s and the beginning of the 2000s, which is the case for both males and females.

Figures 11.28 to 11.33 illustrate long-term trends of self-rated health status at age fifty-five to sixty-four and DI participation rates at age sixty to sixty-four for males and females, respectively. Figures 11.28 and 11.29 show that there is little correspondence between DI participation and the shares of those who reported their health was “excellent” or “very good” and those who reported it as “very good” or “good.” The DI participation rate dropped in 2004 for males and showed an uptrend for females, while the share of those who reported good or modestly good health remained virtually the same for both males and females.

Figures 11.30 and 11.31 also show little association between DI participation and the share of those who reported bad health (“poor” or “very poor”). The share of people suffering from bad health declined until the mid-1990s but increased from the end of the 1990s for both males and females in a way not correlated with the trend of the DI participation rate for both genders.

Figures 11.32 and 11.33 computed a score of self-rated health status, which assigns “five” to the best of the five choices and “one” to the worst.

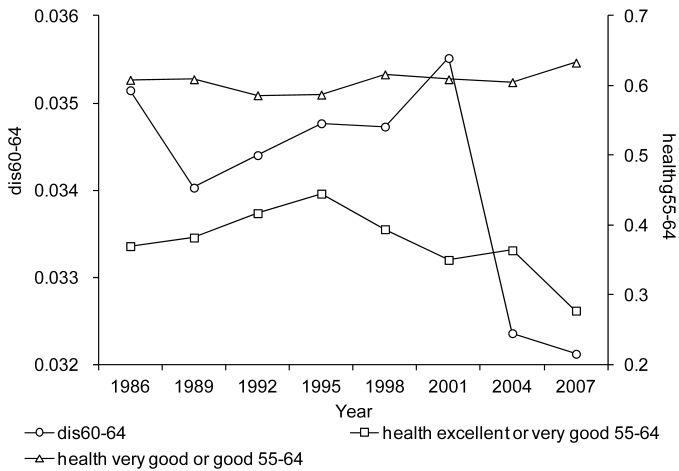


Fig. 11.28 Male good health versus disability, aged sixty

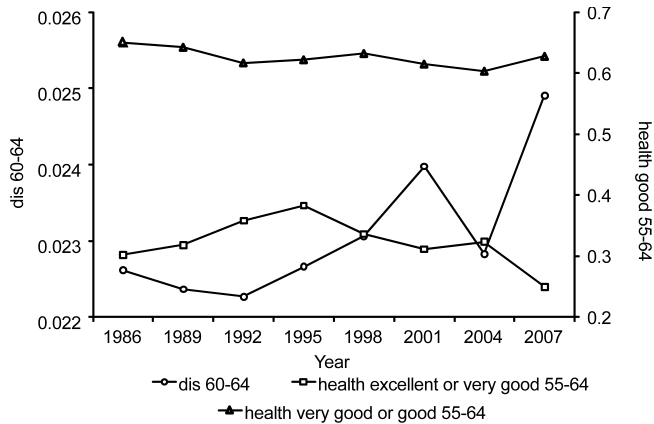


Fig. 11.29 Female good health versus disability, aged sixty

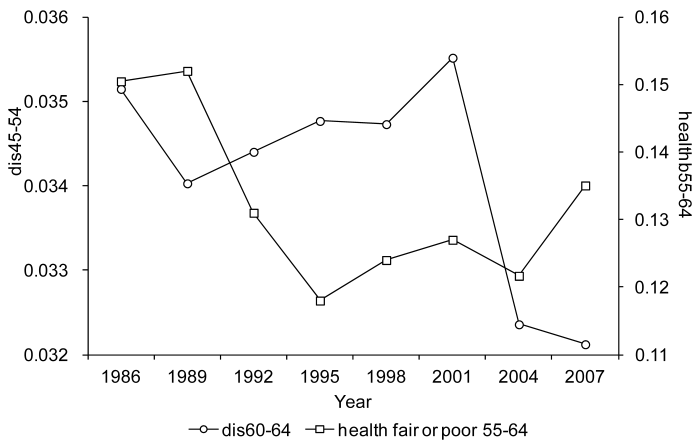


Fig. 11.30 Male bad health versus disability, aged sixty

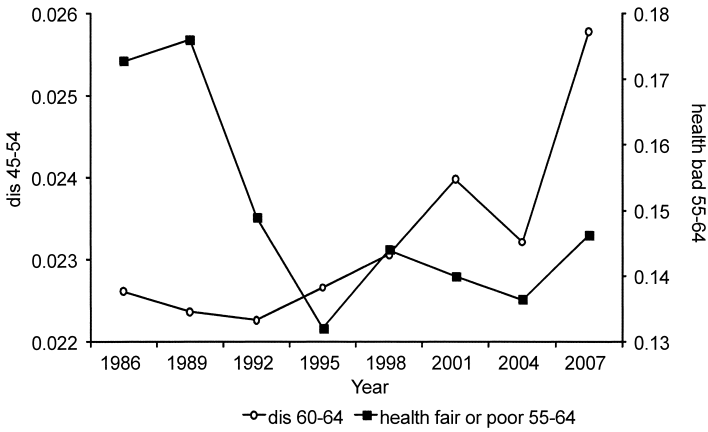


Fig. 11.31 Female bad health versus disability, aged sixty

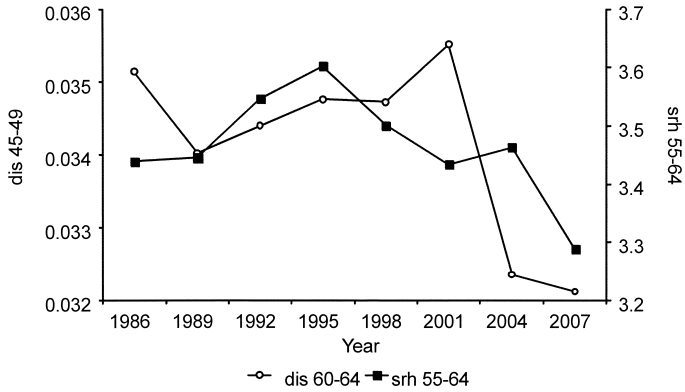


Fig. 11.32 Male self-rated health versus disability, aged sixty

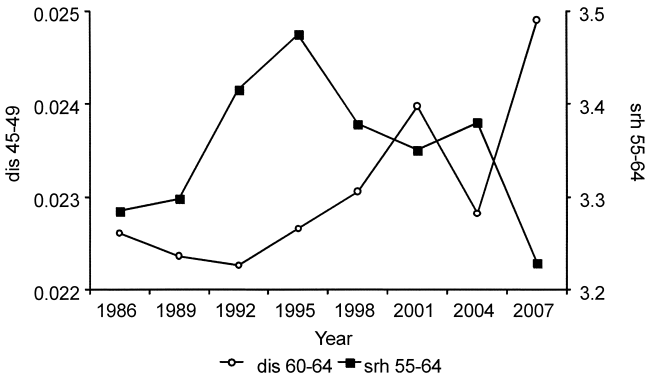


Fig. 11.33 Female self-rated health versus disability, aged sixty

Again, there is no clear relationship between DI participation and the score of self-perceived health status. These figures show that the trend of DI participation is unrelated with self-rated health status, the same as for the relationship between DI participation and mortality, although we need to be careful in interpreting the comparison of self-rated health status across individuals and time.

11.5 Concluding Remarks

This chapter investigates historical information to explore the relationship between labor force participation of middle aged and old people and the disability program in Japan. In particular, we explore the time series dimension to identify what has determined the trend in disability program participation over time and relate it with the labor supply.

We find that the mortality and other health measures have been largely unrelated with the disability program participation rates. While major revisions of the disability program have slightly expanded the eligibility for the DI program, the program participation is still very low; thus, the effect on labor force participation is very limited in Japan in contrast to some European countries with a high take-up rate inducing early retirement.

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