

Intergenerational Equity and Gender Gap in Pension Issues

by

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1. Introduction

Pension issues have been one of the major challenges for almost all countries in the world. Design, coverage, and implementation of pension systems remain to be neatly handled.

Pension problems are so many. This paper takes up only two pension problems; intergenerational equity and gender gap. A population aging with slower economic growth is making more serious intergenerational equity concerns on pensions, while women's increased participation in the labor market along with their changing role in family responsibilities is requiring for societies to reduce gender pension gap.

The next section deals with pension equity issues among different generations, followed by a discussion on how to close the pension gap between men and women in section 3.

2. Intergenerational Equity Issues

Hot discussions have been made so far on how equitable the current pension legislation is between generations. There seems to be still little common understanding in the concept of intergenerational equity on pensions, however. Limited discussions within a framework of social security pensions are not relevant. Income transfers within families before the set-up of pension systems and in their early stages, built-up social infrastructures, subsidized child-raising including education, and technological development have to be considered at the same time.

Intergenerational equity could matter, if younger and future generations were forced to bear excess burdens which they themselves would not be responsible for, arising from decisions made by the preceding generations. As long as the standard of living for younger actively-working generations is overall higher than that for retired

older ones, securing pension equity between generations might not become acute.¹ Otherwise, an incentive compatibility problem on pensions would get more serious among younger generations.²

Intergenerational equity considerations vary among different pension schemes. This section highlights each pension design in order.

2.1 Pay-as-you-go Defined-benefit Plans

Many countries have established social security defined-benefit (DB) pension systems on a pay-as-you-go (PAYG) basis. With these pension systems they succeeded to considerably reduce the number of the elderly in poverty, since old-age pension benefits provided a basic floor of income after retirement.

Political Risk

The PAYG DB system has been working as a tax-and-transfer system involving huge amounts of income transfers between generations. It is possibly a problem between managers and trade unions, but mainly is a problem between generations.

We have a political difficulty in this sense. Seniors are strong voters while the younger people and future generations currently have so weak or no political powers.³ The interest of future generations is likely to be neglected.

Indeed, in the early stages, politicians were likely to commit too many promises for retired persons as long as the current account of the pension system was in surplus. Politicians become quite reluctant, however, to introduce unpopular and painful measures such as increases in the contribution rate, increases in the tax rate, increases in the normal pensionable age, and reductions in the replacement rate of pensions, even when these measures are immediately required for maintaining the financial sustainability of pension systems. Two time lags were evident for politicians. One is the lag for a majority of them to realize changed unfavorable circumstances. The other is the lag for them to adopt painful policy measures above stated.

¹ Supporting an increased number of retired people is possible if output grows. Economic output depends crucially on the supply of workers, and thus increasing labor force participation on the part of young adults, women and early retirees will be required.

² The question here is whether or not pensions are worth buying.

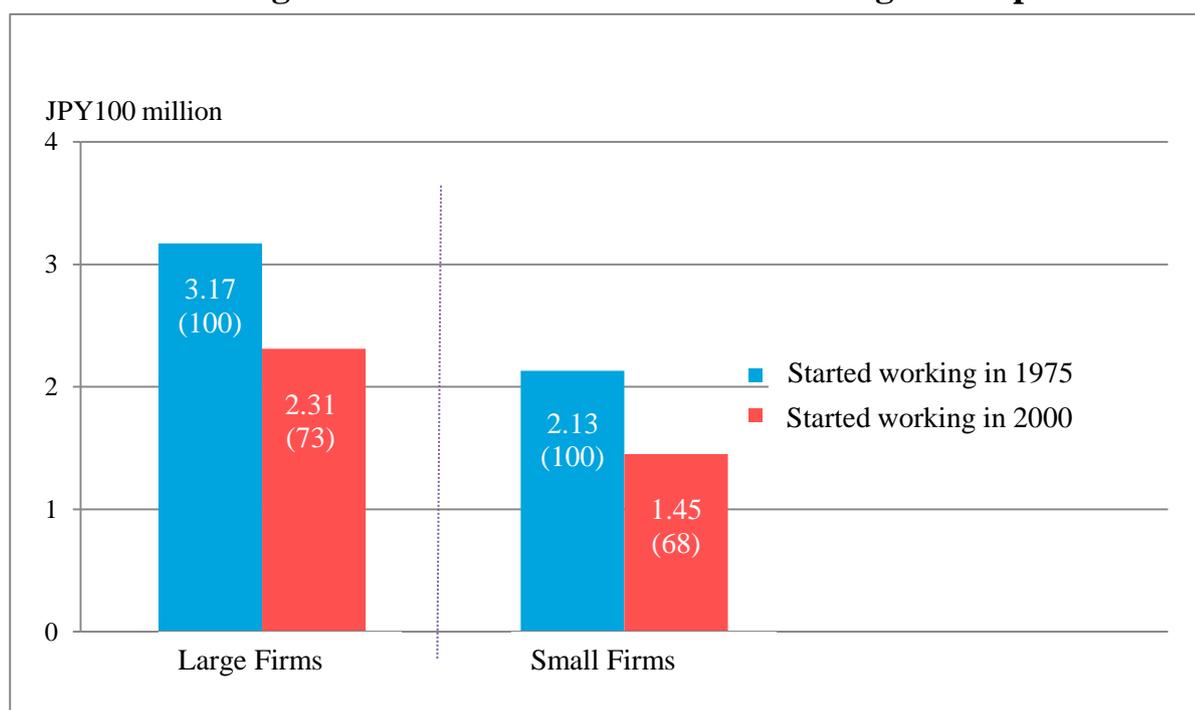
³ There are several proposals for revising voting systems. Demeny (1986) proposed a system which takes the number of non-adult children into account. Another proposal for voting system innovation is to entitle voting rights to adult people in proportion to life expectancy (see Oguro and Ishida 2012). Others refer to “the Iroquois’ law of seven generations” in political decisions (see Frischmann 2005, for example).

Changing Circumstances

Continued economic growth mitigates difficulties in maintaining the PAYG pension finance healthy. Were the economy to fail to expand when the share of senior citizens in the population increased, the real after-tax pay of workers would decline. Younger people would despair of achieving a higher standard of living than their parents, and the existing level of intergenerational transfers from workers to the retired would become hard to maintain.

Current Japan might be an extreme case. Due to the long-lasting economic slump, the expected lifetime wages for current younger generations could be about 30 percent lower in real terms than those for the current older generations, as is depicted in Figure 1. For the past 20 years, the wage/salary profile for younger generations has been flattened (see Figure 2). A majority of current younger generations in Japan accordingly have their perception that they will not be better-off than their parents' generation in terms of the living standard.

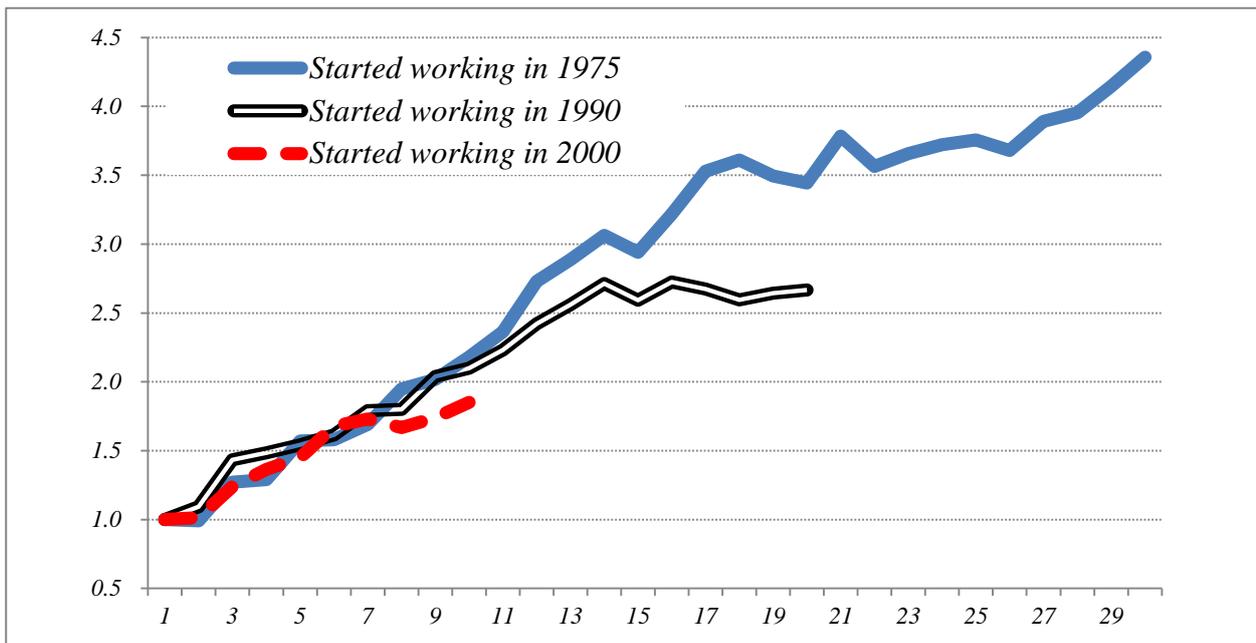
Figure 1 Reductions in Lifetime Wages in Japan



Note: College-educated white collar workers in manufacturing industry in terms of 2005 wages, assuming a zero discount rate.

Source: Hori and Iwamoto (2012).

Figure 2 Lifetime Wage Profiles for Workers in Manufacturing Industry



Note: Large manufacturing firms; college-educated white-collar workers.

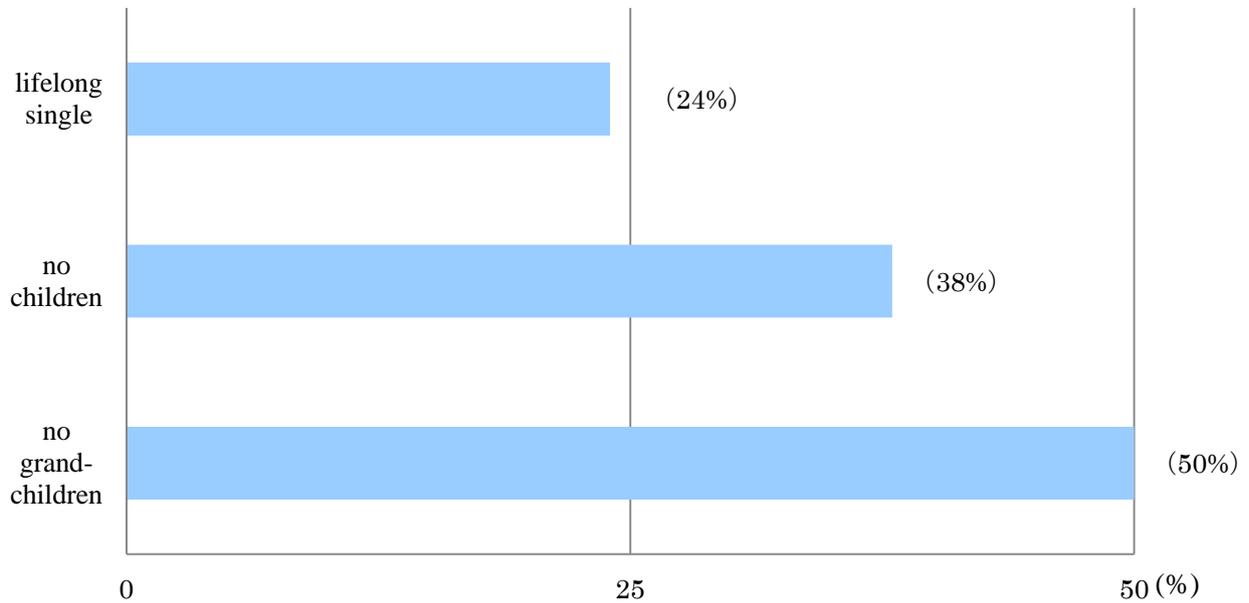
Source: Hori and Iwamoto (2012).

To make the matter worse, the total fertility rate in Japan remains at a very low level around 1.3 or 1.4. Kaneko (2008) estimated that nearly 40 percent of women who were born in 1990 would have no children during their whole life and around 50 percent of them would have no grandchildren if the current low fertility rate remain unchanged in the future (see Figure 3). The Japanese family structure might soon face a drastic change, which could intensify tensions between generations. The public sense of intergenerational solidarity would be weakened, then.

Excess Pension Liabilities in Percent of GDP

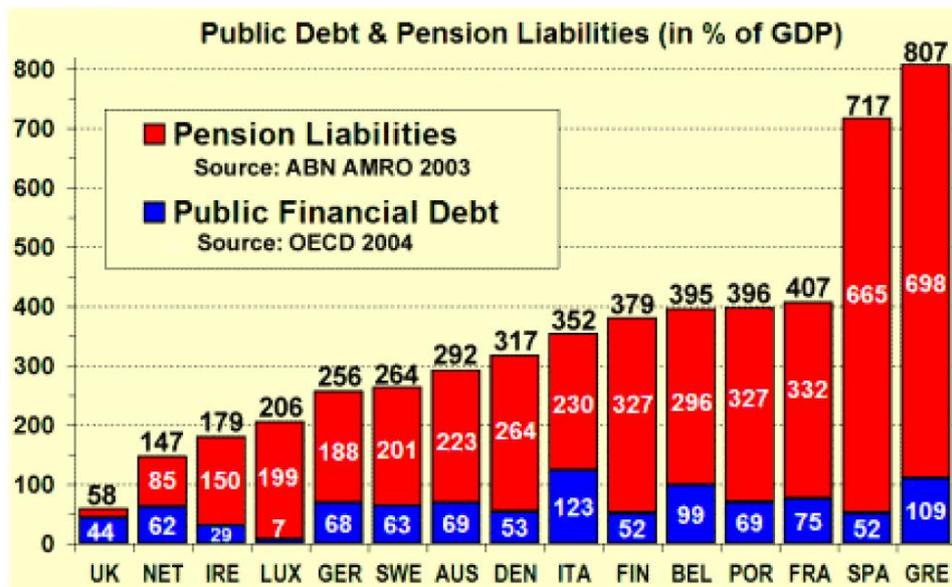
The long-term financial sustainability of the PAYG pension system can be checked more properly by overtime changes in excess liabilities accrued from contributions made in the past (or accrued-to-date net liabilities, in other words) than yearly changes in its current account balance (see IMF 2011, for example). Figure 4 presents social security pension liabilities in percent of GDP in the European Union. A reduction of those hidden and implicit liabilities is crucially dependent on political will.

Figure 3 Probabilities of No Children in Their Lifetime and No Grandchildren for Women Who Were Born in Japan in 1990



Source: Kaneko (2008)

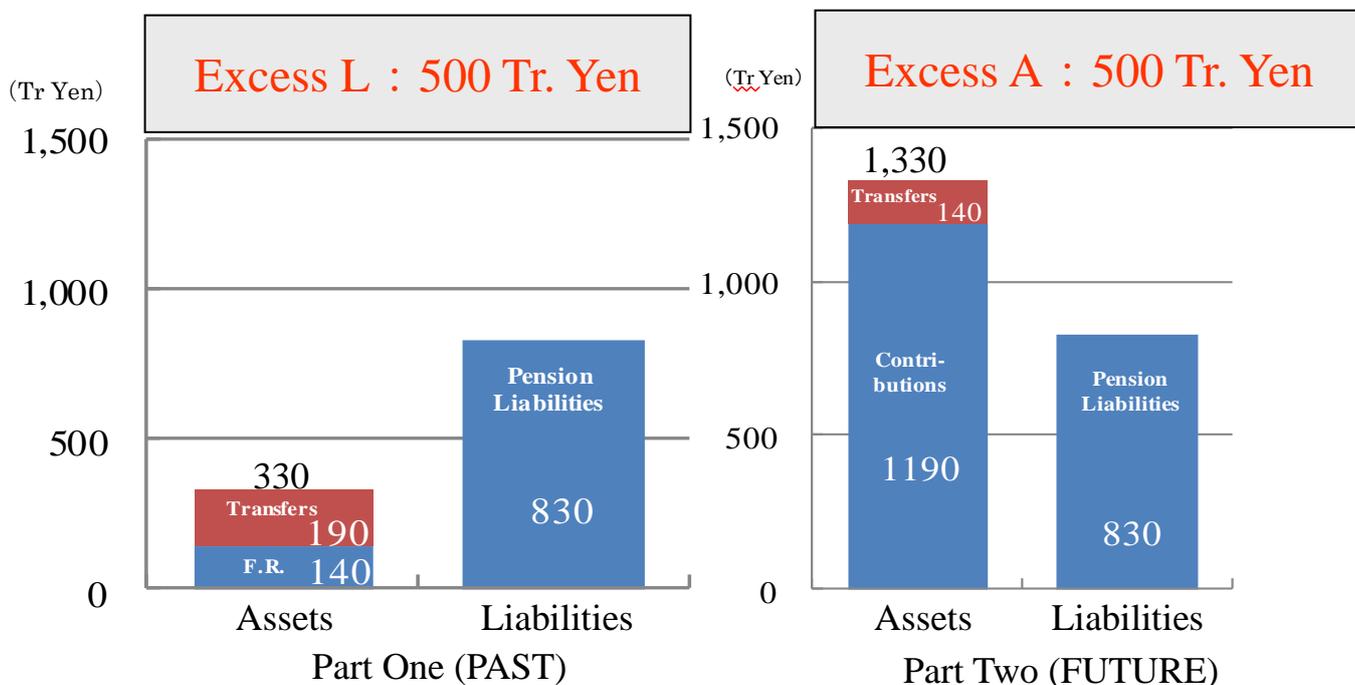
Figure 4 Public Debt and State Pension Liabilities (in % of GDP)



Source: Chytilova and Mejstrik (2007, p.13)

Figure 5 demonstrates the balance sheet of Japan’s major social security pension system for private-sector employees (Kosei-Nenkin-Hoken: KNH) as at March 2010. It had accrued-to-date net liabilities of JPY 5 trillion, which was equivalent to around 100 percent of GDP.⁴

Figure 5 Balance Sheet of the KNH (as at 31st March 2010)



Source: Author’s own calculation based on the 2009 actuarial report by the MHLW, Japan.

The United States and Sweden publish the balance sheet of social security pensions once a year.⁵ Its annual release enables the public to make an early check on changing long-term financial situations of social security pensions. It is worth recommending for other countries.

⁴ The assumptions in calculating the balance sheet are as follows. First, annual increases in wages and CPI are 2.5 percent and 1.0 percent respectively in nominal terms, while the discount rate is 4.1 per cent annually. Second, the contribution rate will remain unchanged at 18.3 percent from 2017 on. Third, the period up to March 2110 is taken into account.

⁵ More exactly, the US annually publishes the value of “unfunded obligations” of social security. Pension studies based on the balance sheet approach are given by the Project on Intergenerational Equity (2005) (2006) and Takayama (2005), for example. They include case studies in Sweden, Germany, Italy, the US, Canada, and Japan.

Automatic Adjustment

In a PAYG system, pension benefits don't come from the heaven. Pension benefits for the aged parents are financed mainly by contributions of their children and grandchildren. It is a socialized system of intergenerational transfers between parents and their children. Without a socialized system, ordinary parents and their children would have responded quite flexibly to a changing circumstance. The retired parents are expected to live a decent life, while actively working children should be adequately rewarded for their labors. There should be little difference in the design of a PAYG DB social security pension plan and the family-based income transfers between aged parents and their children. The PAYG DB system should prescribe the rules for satisfying two needs for the aged parents and their children, just stated.

The benefits and contributions in PAYG DB plan should be changed in a timely and proper way to respond to changing circumstances. It partly comes from the incompleteness of planning for different possible outcomes in the future. Everlasting reforms are required to keep the system viable.

The most serious problem in the PAYG pension system is how to reduce the political risk above mentioned. Automatic adjustments are found to be a wise way to do it (see Whitehouse et al. 2009).

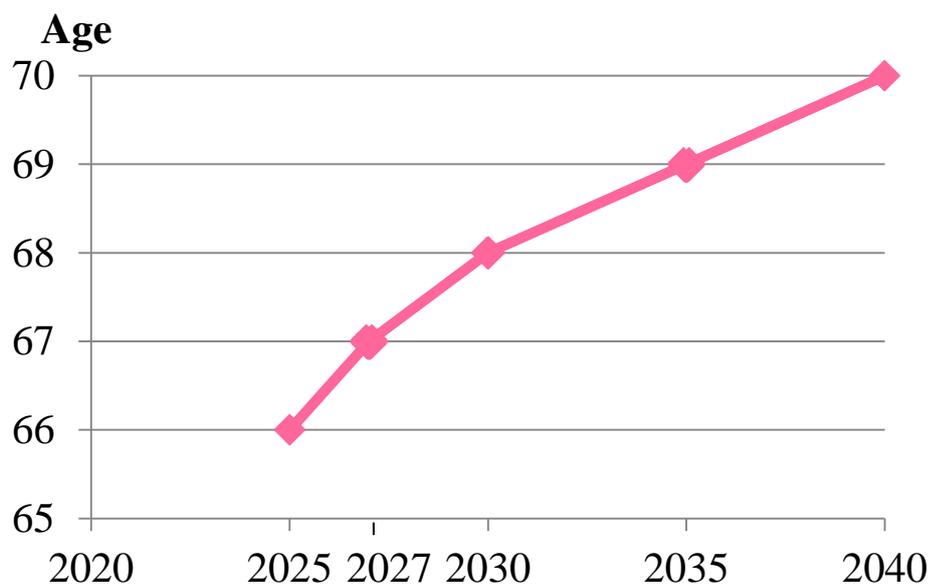
Sweden invented an automatic balance mechanism to ensure the social security pension system viable in the long term. If excess liabilities on the balance sheet are verified, then the notional rate of return is automatically adjusted downward. Germany and Japan already introduced new indexation formulas of pension benefit levels based on demographic changes.

In 2006, Denmark introduced an automatic indexation of the normal pensionable age to longevity. This step is based on the recognition that indexation to longevity is quite a wise move in order to avoid political risks while ensuring equity between generations, since the average period that individuals will receive social security old-age pension benefits will be the same for all generations. Denmark's Ministry of Social Welfare anticipates that the normal pensionable age will reach 70 around 2040,⁶ as is shown in Figure 6.

In 2011, the Netherlands reached an agreement among stakeholders (labor unions, business, and the government) to follow Denmark's indexation to longevity in quite a similar way. Later in the same year, Italy also decided to introduce indexation to longevity after 2018, when the normal pensionable age will reach 67 (see Mazzaferro, 2012).

⁶ See Ministry of Social Welfare, Denmark (2008, pp.53-55).

Figure 6 Expected Normal Pensionable Age in Denmark



Source: EU (2008) “Denmark, National Report on Strategies for Social Protection and Social Inclusion 2008-2009”; p.55.

Unless such automatic adjustments are implemented, pension reforms for healthier financing are likely to be delayed, forcing people to accept sudden unintended changes in pension promises under an urgent critical moment. Pressures from the outside can often be a trigger for these changes, as was shown recently in Greece.

2.2 Notional Defined-contribution Plans

In the 1990s, Sweden introduced a notional defined-contribution (NDC) plan to replace the former PAYG DB one. Italy, Poland and Latvia followed Sweden.

In a NDC plan, each contribution is directly linked to the pension benefit on an individual basis. On an aggregate basis, however, some adjustment is required to maintain the long-term financial sustainability, since NDC plans are financed on a PAYG basis.

Sweden did downward adjustments in the level of pension benefits in 2010 and 2011 under the automatic balance mechanism. In 2011, Italy decided to rapidly increase the normal pensionable age from 65 to 67 during the years to come, and to introduce an automatic indexation to longevity from 2018 on, as above stated.

2.3 Funded Defined-benefit Occupational Plans

Funded DB occupational plans seem to be free from intergenerational equity issues at first sight. It is basically assumed that any risks involved in these plans are all shared within each generation.

Funded DB plans, however, confront quite different risks. Among others, an investment risk and a risk of bankruptcy of the sponsor companies are both serious.⁷ A rate of return from investment is intrinsically volatile, and an unexpected poor investment performance induces increased unfunded pension liabilities, which the sponsor companies have to make up for.

If the sponsors suffer from financial difficulties or facing bankruptcy, a wage cut and disemploying a considerable number of their actively-working employees are inevitable, together with braking hard to new employment. Through these measures, entitlements to pension benefits for current pensioners are protected at the expense of younger actively-working employees. Thus, DB plans will incur equity issues between generations irrespective of PAYG or funded.

This kind of income transfers between generations within funded DB occupational plans often take place, since ups and downs in business conditions are usual, and few companies can survive for a long period. Even excellent companies such as General Motors Corporation, Japan Airlines, and Tokyo Electric Power Company (TEPCO), are no exceptions. The employer-sponsored plans in these companies were forced to reduce part of earned entitlements to pension benefits including existing pensioners. This reduction is a compromise between generations for their companies to survive.

2.4 Funded Defined-contribution Plans

A funded DC plan will face an investment risk (namely, quite a volatile rate of return), a risk of future earnings trajectories, an inflation risk, and an unexpected longer life expectancy. Very few generations could be lucky enough to avoid all these risks in their long lives, since better instruments to minimize these risks are currently missing. Many people would be forced to receive an unexpected low amount of pension benefits in their old age. Market forces are usually merciless, inducing a long list of the victims within each generation under funded DC plans.

By definition, DC plans fix the contribution rate, regardless of financial or notional, and all the unpleasant adjustments, if any, are to be made on the benefit side.⁸

⁷ An unexpected longer life expectancy is another major cause of increased unfunded liabilities.

⁸ Practice frequently deviates from the pure case, however. The contribution rate may be adjusted to changing circumstances.

Beneficiaries of pensions have less time to adjust themselves to unexpected events and fewer options for doing so.

In the end, life is still risky. We have to realize that we cannot eliminate all of risks in our long life completely. But we have been making great efforts to control these risks at a minimum level.

3. Gender Gap Issues

Women are likely to receive a lower amount of pension benefits from social security than men. Take Japan, for instance. In 2010, on average, the monthly amount of old-age benefits for women from the major pension program (KNH) was JPY104,000, just around 60 percent of the amount for men (JPY171,000), as is shown in Figure 7.⁹ Further, women are likely to live longer than men, and are typically younger than their husbands. An overwhelming majority of recipients of a survivor pension are accordingly women, whereas the level of a survivor benefit is not adequate very often. In old age, women usually face a greater risk of poverty since the principal income source for a majority of the elderly women is a pension benefit from social security.

There are several reasons for this difference in the level of pension benefits between men and women. Among others, women's wage rates are lower than men's one on average. Moreover, women are apt to work for fewer hours per week as non-regular employees, and participate for fewer years in market work than men, sparing more time for caring for their children and the frail elderly dependents. Still more, women often work in the informal sector where no entitlement to pension benefits is provided. In addition, many countries punish divorced women in terms of pension benefit entitlements.

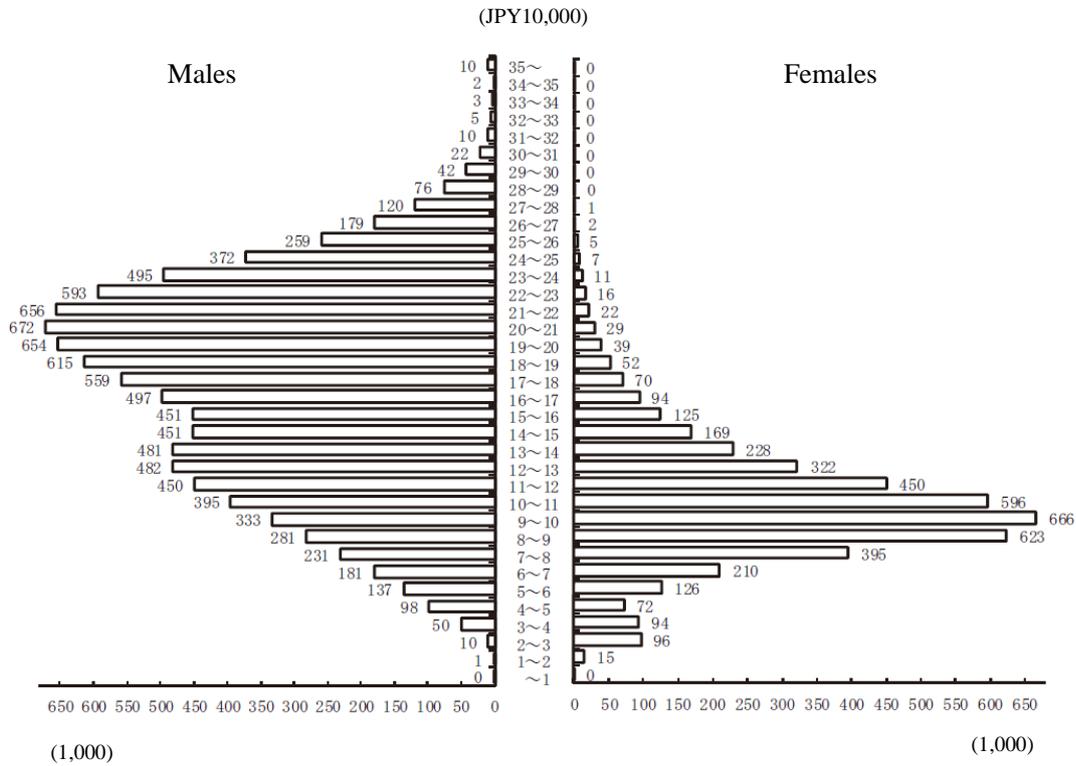
This section takes up these issues one by one, and discusses the ways for more equitable treatments between men and women in the pension system, while mentioning to some implications on the incentive structure.¹⁰

Needless to say, pension policies do not always come first. Measures for directly removing persistent gender differences in labor market participation and for directly

⁹ On the other hand, the replacement rate for women will tend to be higher than men if minimum pensions or flat-rate basic benefits are implemented. Moreover, the gap in pension wealth from social security will be smaller between men and women than the gap in monthly benefit levels, since women will live longer.

¹⁰ The basic references for gender issues on pensions are Barr-Diamond (2008: Chapter 8) and Council of the European Union (2012: Sections 3.5 and 5.1).

Figure 7 Distribution of Monthly Amounts of Old-age Benefits of the Major Social Security Pension Program for Private Sector Employees in Japan in March 2011



Source: Ministry of Health, Labor and Welfare, Japan, *The 2010 Annual Report of Social Security Pensions*, 2012 (in Japanese).

changing an unequal division of caring roles are critically important for achieving greater gender neutrality in pensions.¹¹

3.1 Old-age Benefits

Pensions for Lower Wage Earners

Women remain disadvantaged in earning wages/salaries. Their access to higher education, good jobs, and on-the-job trainings is often limited, mainly due to social pressures and constraints. The most important policy-option for women's stronger labor market attachment is thus to remove such kinds of pressures/constraints.

Pensions can do something to partly remedy the wage gap, however, which will benefit a majority of women who earn lower wages, in the end.

The contribution rate can be set at a lower level for low wage-earners. This may

¹¹ In order to achieve gender neutrality in the labor market, securing equal opportunities in paid work and equal pay for equal work are required.

encourage employers to increase their labor demand for low wage-earners. The required money to compensate for the lower contribution rate should be financed either by a higher contribution rate for middle and high wage-earners or buy a transfer from general revenue.

If a country implements a two-tier benefit system including a flat-rate basic benefit, as is the case in the UK and Japan, or a progressive benefit formula of the US type, then the gap in pension benefits will be smaller than the gap in wages.

Pensions for Non-regular Employees

Entitlements to social security earnings-related pensions were often limited to regular employees working for full time per week. A growing number of countries have expanded their coverage of earnings-related pensions to non-regular atypical employees.

Its expansion, however, induced employers to offer a lower wage rate to atypical employees working for shorter time per week. It also induced them to partly change their employment contract into a contract-based work with self-employed persons. It increased the number of the “pseudo” self-employed. Additionally, if the system implementation is weak, the coverage expansion to non-regular employees will induce a growing number of persons working in the informal sector. All these changes were initiated by employers who wanted to contain thereby increased social security contributions.

Pension Credits to Child-raising and Care-givers to the Frail Elderly

Benefits for those in maternity leave and parental leave are usually smaller than their wages/salaries just before they were earning. If these benefits are a base for entitling their pension benefit, a majority of women will be forced to receive a lower amount of old-age pension benefit.

To solve this problem, a growing number of countries have provided special pension credits to these persons. A typical way is to exempt them to pay social security contributions, while ensuring them to receive pension benefits as if they were paying their contributions as before, during their maternity leave and parental leave. The required money is paid out of general revenue or contributions made by other insured persons. Through these credits, pensions can be neutral to child-bearing and infant-raising.

Longer career interruption due to infant-raising cause more difficulties in re-entering the labor market, leading to lower salaries. Some countries thus give

special advantages to those women who work as non-regular employees (for example, as part-time workers) while engaging in child-raising. Germany treats them as if they were earning wages 1.5 times their actual wages until their children reach 10 years old, within a wage limit. Some critics say, however, these advantages will reduce an incentive to remain or resume as full-time regular employees. Canada and the UK calculate career average earnings by dropping years spent in child-raising. This calculation may give more advantages to higher-earning women.

Other countries promise a plus alpha old-age pension benefit to those who raised their child (children). The purpose of implementing this benefit is to maintain a higher fertility rate. Few countries have a lower contribution rate for those in child-raising, however, although several countries once examined it.

Pension credits to care-givers to the frail elderly remain very few in numbers, but a growing number of countries have set up a social insurance system for long-term care. Without this system, women are likely to be forced to care their old parent(s) and/or parent(s)-in-law, which causes fewer years in paid work. Consequently their level of old-age pension benefits is lower.

Pensions for Full-time Housewives

Pension arrangement for a dependent full-time housewife varies country to country, and by stages of economic development. Pension design can be individualistic, or be based on a household unit. If purely individualistic, no cares are paid to a dependent full-time housewife and no survivor pension is provided. If purely individualistic, again, lower wage earners receive a lower amount of pension benefits, as well.

Many countries have household-based social security pensions, however. If a husband earns wages/salaries and makes contributions to social security, his dependent wife is entitled to receive her old-age pension benefit.

Entitlements to old-age pensions differ in some ways. Typically, pension promises to a dependent wife are around one half of the old-age benefit her husband receives. Another option is an equal earnings-split between husband and wife in entitling pension benefits.¹² This may reduce a men's incentive to marry, however.

The Japan's case is another example. Full-time housewives of regular employees are automatically entitled to the flat-rate basic benefit, without being required to make any direct individual payment to the social insurance pension system. Instead, the required money to pay these benefits comes from contributions made by singles

¹² See Burkhauser-Holder (1982), for example.

and from general revenue. This entitlement raised contentious issues, however. The number of dual-income couples and single women had been steadily increasing, to such a degree that full-time housewives no longer constitute a majority of working-age women. Single women and dual-income couples have often attacked the current provisions geared toward full-time housewives as unfair. The issue lies in ideologically contested ground.¹³

Pensions for Divorced Wives

Divorce after many years of marriage used to bring out a very low amount of old-age pension benefits for a wife who had a short earnings history. Currently many countries have implemented a special provision, providing pension benefits to a divorced wife, by introducing an equal earnings-split between spouses during their marriage. This provision increased an incentive for women to legally divorce.

Normal Pensionable Age

Many countries used to have a lower normal pensionable age for women than men. Other things being the same, this provision favored women, whereas it induced them to retire earlier than men.

Labor force participation rates for women are usually lower than men in their sixties, as is presented in Table 1. A lower actual retirement age for women indicates shorter years of coverage in social security pensions, resulting in a lower level of old-age pension benefits.

Women live longer than men, on average (see Figure 8). Under unisex mortality tables, women are likely to receive more in present discount value of social security pension wealth.

Currently a growing number of countries adopt the same normal pensionable age between men and women, as a rule. Pressures calling for gender equality from the women's side have realized this change.¹⁴

¹³ See Takayama (2009).

¹⁴ A shift from a DB plan to a DC one will disadvantage women, in general. Moreover, the coverage of women in occupational pensions is much lower than men's coverage, which will accentuate the gender pension gap.

Table 1 Labor Force Participation Rates of the Elderly in Japan

A: Males

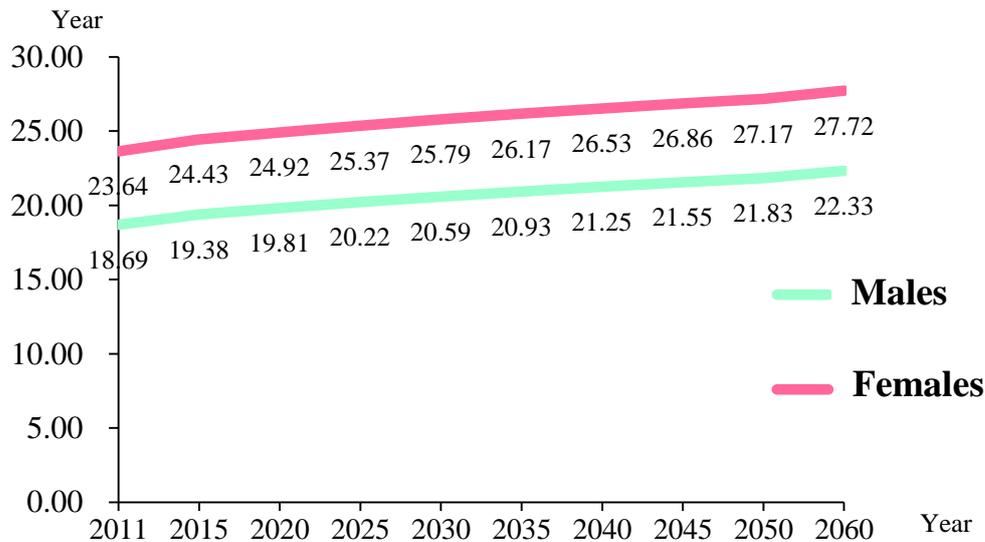
Year	Age		
	60-64	65-69	70+
1975	79.4%	63.9%	31.6%
1980	77.8	60.1	28.4
1985	72.5	55.6	26.8
1990	72.9	54.1	26.3
1995	74.9	54.2	26.1
2000	72.6	51.1	24.3
2005	70.3	46.7	21.1
2010	76.0	48.9	19.6

B: Females

Year	Age		
	60-64	65-69	70+
1975	38.0%	27.7%	9.3%
1980	38.8	25.8	9.6
1985	38.5	26.8	10.0
1990	39.5	27.6	10.4
1995	39.7	27.2	10.3
2000	39.5	25.4	9.8
2005	40.1	24.0	8.7
2010	45.7	27.4	8.4

Source: Statistics Bureau, Ministry of Internal Affairs and Communications, Japan, *Labor Force Survey*.

Figure 8 Life Expectancy at Age 65 in Japan



Source: National Institute of Population and Social Security Research (2012).

3.2 Survivor Benefits

An overwhelming majority of recipients of survivor pensions are women, and among them a higher head-count ratio of poverty is observed. Some countries still have a compelling need for increases in the level of survivor pensions, while others, such as Japan, no longer face such a need. In Japan, a female survivor can enjoy a full amount of flat-rate benefits and 3/4 of earnings-related old-age benefits of her spouse, combined.

In a traditional DB pension system, survivor benefits are financed by the overall income of the system. If a higher level of survivor pensions is in need, then an increased contribution rate or a reduced level of old-age pensions is required. Alternatively, a severer qualification of disability pensions can provide a higher level of survivor benefits. Needless to say, survivor pensions benefit couples, while single persons have no access to them. There are winners and losers from a change in survivor pensions.

In a defined-contribution pension system, a joint-life annuity option with an adequate fraction for the survivor may be a solution.

3.3 Challenges Ahead

Women's roles in home responsibilities and their employment conditions have been changing. The same pension system can have different impacts on the gender

pension gap among varying cohorts of working-age women.

Gender issues on pensions are much complicated and there are no single solutions. There often take place trade-offs between equity and incentives to work. Some remedy options benefit part of women at the expense of other persons. Singles and couples have their different preferences, while the interest of a single-earner couple often contradicts that of a dual-earner couple.

Since social values vary person to person, it is not an easy task for societies to reach a compromise regarding gender issues on pensions. Still missing are refined empirical studies using panel data on the impact of alternative pension policy options on equity between men and women, incentives to market work, and care activities. Cool and careful evidence-based policy considerations are badly needed, instead of heated discussions based on specific ideologies or vested interests.

[Acknowledgement]

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