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政策科学総合研究事業（政策科学推進研究事業）

ダイナミック・マイクロシミュレーションモデルによる  
所得保障施策の評価・分析に関する研究

平成 22 年度 総括・分担研究報告書

研究代表者 稲垣 誠一

平成 23（2011）年 3 月

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総括研究報告書

ダイナミック・マイクロシミュレーションモデルによる所得保障施策の評価・分析に関する研究

研究代表者	稲垣 誠一	（一橋大学経済研究所・教授）
研究分担者	高山 憲之	（一橋大学経済研究所・特任教授）
研究分担者	小塩 隆士	（一橋大学経済研究所・教授）
研究協力者	大石亜希子	（千葉大学・准教授）
研究協力者	清水谷 論	（世界平和研究所・主任研究員）
研究協力者	小黑 一正	（一橋大学経済研究所・准教授）
研究協力者	小林慶一郎	（一橋大学経済研究所・教授）
研究協力者	堀 雅博	（一橋大学経済研究所・教授）

研究要旨

年金制度改革案に関する政策シミュレーションを実施できるよう、既存のダイナミック・マイクロシミュレーションモデル（INAHSIM）に機能追加を行った。その際、初期値人口データについては、年金記録に関する履歴データを調査することなどによって精度の向上を図り、遷移確率の想定に当たっては、1950年代生まれの者や高齢者の就業行動などの分析を行った。

政策シミュレーションでは、これまでに提案された年金制度改革案のうち4つ（全国民共通の所得比例年金と最低保障年金、基礎年金の全額または部分税方式化）を取り上げ、機能追加を行ったINAHSIMを用いて、政策シミュレーションを試みた。その結果、民主党案を想定した全国民共通の所得比例年金と最低保障年金は、制度移行に時間がかかり、当分の間（2030年頃まで）は、貧困高齢者の改善効果が見込めないこと、超長期（2050年頃以降）では大きな改善効果が見込めるものの、巨額の追加財源が必要となることが明らかになった。また、基礎年金の一部を税方式とする改革案は、貧困高齢者を直ちに削減するとともに、追加財源が最小限に抑えられることがわかった。

A. 研究目的

ダイナミック・マイクロシミュレーションモデルを用い、日本社会の将来における世帯構造、所得、税・社会保険料負担などについて、世帯・個人単位での政策シミュレーションを実施する。そのシミュレーション結果を基に、想定される様々な社会保障制度や税制改革案について、現時点だけでなく、中長期、そして21世紀末までの超長期の各時点におけ

る所得分布などに及ぼす効果を定量的に評価し、長期の時間軸を考慮した視点から、望ましい社会保障政策や税制の改革について検討を行う。

B. 研究方法

既存のダイナミック・マイクロシミュレーションモデル（INAHSIM）に機能追加を行い、政策シミュレーションを実施し、分配面からの評価を

行う。政策評価の対象とする所得保障施策は、年金制度改革を中心に、給付付き税額控除制度の導入や子ども手当の導入についても検討を加える。

基本的な政策評価は、制度改革によって、貧困率をどれだけ改善されるか、追加費用はどれくらい必要かという点に加え、負担と給付との関係から公平性が確保できるかについても検証する。

ダイナミック・マイクロシミュレーションモデルでは、初期値人口として個々人の様々な属性を含んだ個票データを用いるとともに、個々人の行動を表す遷移確率を想定する必要がある、これらのデータの質がシミュレーション結果に本質的に影響を及ぼす。

初期値人口データは、国民生活基礎調査の個票を基礎として、不足している個人属性（別居している者の親子関係や年金の加入履歴など）は統計的に補完したり、他の調査から付加したりして作成する。とりわけ重要な年金制度に関する保険料の納付記録や加入履歴については、ねんきん定期便の記載内容を新たに調査することによって、行政データを取得する。

遷移確率は、結婚行動や就業行動など、個々人の経済行動を表すものであり、様々な統計データを基礎とし、できる限りディープなパラメータを推定して、シミュレーションを実施する。また、その際、制度改革が個々人の行動に及ぼす影響も可能な限り評価し、遷移確率を想定する。

#### （倫理面への配慮）

個票データの取扱いについては、個人のプライバシーに十分に留意するとともに、一般の研究における倫理性と同様の配慮の下に研究を実施した。

### C. 研究結果

研究成果は、初期値人口データに関する研究、

遷移確率に関する研究、モデルの構築及び政策シミュレーションに大別される。

まず、初期値人口データに関しては、年金記録に関する高山論文の研究成果を基礎として、ねんきん定期便の加入履歴等に関するインターネット調査を実施し、年金制度改革の政策シミュレーションに不可欠なデータを入手し、初期値人口を作成した。

遷移確率については、高齢者の就業行動に関する小塩・大石・清水谷論文、1950年代生まれの就業行動に関する稲垣論文を参考に、従前のシミュレーションで用いた遷移確率の一部見直しを行った。

モデルについては、年金シミュレーションのための機能強化を行った。その内容は、INAHSIMに関する稲垣論文に示したとおりである。

政策シミュレーションについては、年金制度改革案の政策シミュレーションに関する稲垣論文に示すとおり、これまでに提案された改革案のうち4つ（全国民共通の所得比例年金と最低保障年金、基礎年金の全額または部分税方式化）を取り上げ、INAHSIMを用いて、政策シミュレーションを試みた。

その結果、民主党案を想定した全国民共通の所得比例年金と最低保障年金は、制度移行に時間がかかり、当分の間は、貧困高齢者の改善効果が見込めないこと、超長期では大きな改善効果が見込めるものの、巨額の追加財源が必要となることが明らかになった。また、基礎年金の一部を税方式とする改革案は、貧困高齢者を直ちに削減するとともに、追加財源が最小限に抑えられることがわかった。

### D. 考察

ダイナミック・マイクロシミュレーションモデル

は、個票データのレベルで将来推計を行う手法であり、各種の社会政策が将来の所得分布に及ぼす定量的な影響評価など、特に分配面から政策評価をするために有効なツールであり、本研究でもその効果を実証された。

#### E. 結論

ダイナミック・マイクロシミュレーションモデルは、所得保障施策の評価・分析に極めて有効なツールであることが明らかになった。ただし、政策シミュレーションに当たっては、モデルの開発のみならず、初期値人口データの作成と検証、様々な個人人の行動を表す遷移確率の想定が必要不可欠であり、多くの分野の研究者の共同研究が重要である。

本年度の研究では、年金制度改革によって、個人人の行動に基本的に変化がないという想定の下でシミュレーションを実施したが、次年度では、制度変更による人々の行動変化を内生化した上で、今後の労働供給の変化や年金財政への影響をダイナミック・マイクロシミュレーションモデルに基づいて分析することなどが考えられる。

#### F. 健康危険情報

なし

#### G. 研究発表

##### 1. 論文発表

各分担研究報告書を参照のこと

##### 2. 学会発表

各分担研究報告書を参照のこと

Pension Record-keeping Problems in Japan

研究分担者 高山 憲之（一橋大学経済研究所・特任教授）

研究要旨

年金保険料の支払い記録のうち誰のものか確定していない「宙に浮いた年金記録」は 5000 万件に及ぶが、この年金記録問題は、加入者、事業主、社会保険庁の人的エラーによって起こったものである。日本では、税と社会保険料を一元的に徴収する仕組みがなく、また、年金記録管理のモニタリングが的確に行われてこなかったことに問題がある。正確な記録管理には、定期的かつ迅速な検証が要求され、不一致が発見された時には、加入者と日本年金機構の間の双方向の確認手続きを行うような仕組みの確立が重要である。国民に信頼される政府が、年金制度の基本である。

A. 研究目的

年金記録問題の発生要因を分析し、正確な記録管理のために必要な仕組みを分析する。

B. 研究方法

年金記録に関する各種データを分析し、誰のものか確定していない「宙に浮いた年金記録」の発生要因の分析を行う。この要因分析に基づいて、年金記録問題の解決策を考察する。

（倫理面への配慮）

公表された集計データのみを使用しているため、配慮の必要性は特にない。

C. 研究結果

年金記録問題は、加入者、事業主、社会保険庁の人的エラーによって起こったものである。日本では、税と社会保険料を一元的に徴収する仕組みがなく、また、年金記録管理のモニタリングが十分でなかったことに問題がある。

D. 考察

正確な記録管理には、定期的かつ迅速な検証が要求され、不一致が発見された時には、加入者と日本年金機構の間の双方向の確認手続きを行うような仕組みの確立が重要である。

E. 結論

国民に信頼される政府が、年金制度の基本である。年金記録問題を解決し、今後発生しないような仕組みを確立することが必要である。

F. 健康危険情報

なし

G. 研究発表

1. 論文発表

Takayama, N., "Pension Record-keeping Problems in Japan" in Takayama, N. ed., *Priority Challenges in Pension Administration*,

Maruzen, Co. Ltd., January 2011, pp.91-104.

2.学会発表

なし

H. 知的所有権の取得状況の出願・登録状況

1.特許取得

なし

2.実用新案登録

なし

3.その他

なし



## **Pension Record-keeping Problems in Japan**

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**Noriyuki Takayama**

### **6.1 Introduction<sup>1</sup>**

The administration of the social security system in Japan used to be highly regarded and respected in the international community.<sup>2</sup> However, in May 2007, it was announced by the Japanese government that around 50 million records of social security pensions were floating, not having been integrated into the unified individual pension identification numbers.<sup>3</sup> This mismanagement became a national scandal, ushering in the demise of the Abe administration in the Upper House election in July 2007.

Moreover, in September 2008, the Japanese government also announced that around 69,000 records of salaries were changed through possible false reports from employers since April 1986.

This chapter will examine the current pension record-keeping problems in Japan. The following section describes what happened in keeping pension records. The third section discusses what went wrong in implementing social security pension programmes, while the fourth section explains recent commitments by the government and outcomes in correcting errors in pension records. Next, the fifth section addresses the issue of fraudulent reporting of employee salaries by employers. The sixth section then makes some proposals for better pension programme implementation. The final section concludes the chapter.

### **6.2 What Happened in Keeping Pension Records**

Japan has several schemes with regard to social security pensions for different sections of the population. The oldest scheme dates back to 1884, thus going back more than 120 years. The newest scheme was established in 1961. Before January 1997, pension identification numbers were issued to each participant on a regional basis independently within each pension programme. These used to be changed when the participant moved to another region, to another company or to another pension programme. They were also changed when the participant acquired a new family name

after getting married or divorced. This is mainly because there was no adding-up requirement of covered years among the different pension schemes.<sup>4</sup> Many Japanese thus were likely to have two or more pension identification numbers before retirement. It was only in January 1997 that *unified* pension identification numbers were introduced for all eligible persons in Japan.

When the government implemented the unified pension identification number system, it found that there were some 300 million pension identification numbers, while the number of eligible persons was around 100 million at the time. When despatching unified identification numbers to eligible persons, the Social Insurance Agency (SIA), the organization responsible for managing and implementing social insurance systems in Japan, sent each person a postcard asking whether he or she had multiple pension identification numbers in the past and to send back their reply cards containing a list of all pension numbers they had in the past, if any. The SIA received only 9.16 million replies (around 9%) at that time. The majority of Japanese people failed to recognize how important the reply cards were.

Under the prevailing provisions, the SIA is not allowed to integrate old pension identification numbers into the new unified ones unless an eligible person notifies the SIA of his/her old ones. Usually, people simply notified the pension authorities of their past pension identification numbers just before they retired in order to receive their old-age benefits. For this reason, the process of integrating identification numbers was painstakingly slow and even 10 years after the introduction of unified identification numbers, there still remained around 50 million pension records that had not been integrated. This indicates that the exchange of information on pension record details between programme participants and the SIA was not very successful.<sup>5</sup>

### **6.3 What Went Wrong**

There are five major reasons for the large number of floating pension records in Japan. First, there have been careless mistakes by programme participants, their employers, and agency staff in writing the application forms, in employers' reports on their employees' details, and in processing pension records. Human errors are inevitable. Furthermore, there were fraudulent activities by employees and/or their employers.

Second, generally speaking, Japanese people do not take kindly to error. Government officials in Japan used to be regarded as the best and the brightest, and thus too much reliance has been put on the bureaucracy in the past. The general public was under the illusion that government officials were able to do and did everything correctly without making any mistakes. An effective system of checks with feedback to correct any errors of pension records on a regular basis was never implemented in Japan.

A third reason is that there are variations in the correct pronunciation of Japanese names written in Chinese characters. Prior to the introduction of digitized records in

the 1960s, all pension records were kept in hand-written paper form. In the process of transferring these written records to computer records via punch cards, Japanese names written in Chinese characters could not be handled properly because of technological limitations at that time. Because of the variations in the correct pronunciation of Japanese names consisting of the same Chinese characters, it was necessary to ask each individual to verify the correct pronunciation of their name. However, this was not done in processing the punch cards, mainly due to budget limitations. Card punchers were forced to mechanically assign one pronunciation to each Chinese character, irrespective of whether it was the correct one or not. Mistakes made in the process of transferring the records from the old format to the new one remained uncorrected for a long time.

Fourth, there has been no integrated collection of social security contributions and taxes in Japan. This gave rise to the possibility of fraudulent reporting on pensions by employers, such as underreporting of the number of qualified employees, of monthly salaries and bonus payments, etc.

Fifth, no effective monitoring mechanisms have been set up in the field of pension administration. This is mainly due to reluctance on the part of the SIA to disclose information. It was only in May 2007 that the SIA made public the number of floating pension records after insistent inquiries by a member of parliament of the opposition party.

In sum, programme participants' knowledge of details of the pension system was (and still is) insufficient, and quite often participants lost their pension entitlements simply because of ignorance; their employers did not always pay sufficient attention to providing correct information to the SIA; and the SIA, in turn, behaved passively, waiting until participants claimed their entitlements.

#### **6.4 Recent Government Commitments and Outcomes**

Since May 2007, the problem of the large number of floating pension records has become one of the most serious national challenges, which the Japanese government has been vigorously trying to address. It classified the 50.95 million unidentified records by the insureds' age, finding that 22.15 million cases (around 43%) referred to people under the age of 60 and 28.80 million cases (around 57%) referred to people over the age of 60.<sup>6</sup>

Results of investigations on pending pension records carried out between June 1st, 2006 and September 1<sup>st</sup>, 2010, were published in a progress report, which provided the following five findings. First, among the originally unidentified member records, 15.04 million (29.5%) were recently integrated. Second, 15.65 million of the unidentified records (30.7%) referred to individuals who had either passed away or did not qualify for pension entitlements. Third, for 5.71 million of the unidentified pension records (11.2%), likely matches were identified, but needed to be confirmed, and special notification letters ("blue letters") were sent to these individuals when

addresses were available. Fourth, 4.72 million unidentified pension records (9.3%) were likely matches but still under investigation. Fifth, 9.83 million records (19.3%) required further investigation in the future.

Thus, while some progress was made in resolving the issue, almost 14.6 million pension records still remain unidentified.

From April 2009, the SIA began to send out social security pension statements (“orange letters”) to all programme participants annually. The statement includes pension information on the unified personal identification number, the insured’s name, the pronunciation of the name, gender, birth date, date of enrolment and/or departure from the programme, the identification of the company in which the participant worked/works, all records of monthly salaries and semi-annual bonuses he/she received, records of contributions, and expected amounts of monthly pension benefits. The SIA strongly expects that, upon receiving this statement, participants will actively make responses, which will enable the Agency to integrate the pending pension records and to correct remaining errors in the SIA pensions data base.<sup>7</sup>

## **6.5 Fraudulent Reports by Employers**

In September 2008, the Japanese government also announced that among the social security pension records since April 1986, around 69,000 records of salaries were changed through possible false reports from employers. These changes may have reduced the pension entitlements of the respective persons.

From October 2008, the staff of the SIA began to visit the residences of 20,000 pensioners among the 69,000 persons concerned, and from April 2009, the SIA began to send social security pensions statements to the remaining 49,000 persons who are currently paying pension contributions.

These investigations revealed that around 42,000 business establishments were involved in the changing of records, mainly in the years from 1993 to 1995, when Japan suffered from the burst of the bubble economy.

### *Background for Cheating*

In Japan, the principal social security pensions program for private-sector employees, the Kosei-Nenkin-Hoken (KNH), used to be applied only to business establishments with five employees or more. Establishments with four employees or fewer were excluded from the KNH for a long time.

Opposition parties repeatedly called for KNH coverage to be changed to include small businesses with one employee or more. However, the government was reluctant to heed these demands, since (1) employment conditions of these small businesses were quite unstable, (2) their ability to handle social security documents would be poor, and (3) considerable additional administrative costs would be incurred if implemented.

After long disputes, the KNH coverage was expanded in 1988 to include small

business establishments of one employee or more. As a result, the number of KNH-covered establishments increased sharply after 1988, by 100,000 every year, while the number of regular SIA staff remained more or less unchanged at around 17,000, even after the radical change of the KNH coverage.

In the early 1990s, delinquency in paying KNH contributions increased substantially, since many companies in Japan faced serious financial problems due to the burst of the bubble economy.

In order to avoid bankruptcy, some business establishments were forced to send *false* reports to the SIA, stating that the salary amounts reported in the past had been found to be mistaken and that the “correct” amounts were substantially lower. These businesses were often small family-run businesses, and the false reports were made for the employer and his/her employees, who were often family members. If these reports were accepted by the SIA, these businesses were able to get a refund on part of past contributions, with which they could pay their current KNH contributions and avoid bankruptcy. Other, more malicious employers sent similar *false* reports of past salaries even for employees who were not family members without notifying the employees themselves.

The SIA accepted these false reports without any back-up documents and made few field checks, falsely assuming that employers would always be honest in filing their KNH reports. Furthermore, there was no cross-checking of tax reports with the tax authorities. In this sense, there was a strong incentive for employers to make false KNH reports to the SIA.

The SIA operational manual for collecting contributions and handling delinquency was drafted on the assumption that there was a very limited number of SIA staff in charge of these operations (the number of SIA staff, 17,000, compares with around 45,000 of the National Tax Agency). The SIA was forced to assume that employers would be honest, so that no system for checking for fraud would be needed. SIA social security statements including a change in past salary amounts were sent back directly to employers and *not to their employees*. Thus, employees had few opportunities to check their past earnings records in the SIA database until they reached pensionable age to apply for old-age benefits.

In sum, at the SIA there was an overdependence on applications from program participants and on employers’ reports. All documents related to KNH applications and contribution payments, and letters of confirmation, were exchanged only between employers and the SIA. No direct communication between the SIA to KNH *employees* took place before December 2007. No integrated collection of tax and social security contributions was implemented. Taken together, all these factors helped to give rise to a considerable number of frauds.<sup>8</sup>

## 6.6 Some Proposals for Better Pension Implementation

Up to now, the government has been overwhelmed by the task of integrating

floating pension records and has had little time to build an administrative system for correct pension record-keeping. However, from a longer-term perspective, a strategy for better pension implementation is needed. In this context, the challenge for Japan is not so much to find a solution to the kind of corruption among officials observed in many countries. Rather, the problems that emerged were the result of a series of mistakes without any prompt correction of errors. Proposals for better pension implementation include the following.

### *Periodical Feedback for Correcting Errors*

Given that human errors are inevitable, pension management systems should be designed in such a way that any human errors are corrected promptly through the set-up of periodical and interactive feedback from system participants, their employers and the agency. When a no-match is identified, notification with a corresponding correction and confirmation should follow in due course.<sup>9</sup>

The Japanese must be more realistic and level-headed, and accept that many errors are intrinsically human. Human errors not only took place in the past, but also are and will continue taking place. The Japanese should be more accepting of human errors.<sup>10</sup> The feedback system for error correction needs more funding, more human resources and more machines.

Moreover, pension participants and their employers have to be more active in the error correction process. Unfortunately, so far, the involvement of participants has been limited in Japan. The SIA sent out 100 million letters in January 1997, asking participants to report their multiple pension numbers to be unified under one pension identification number. Only 9.16 million (9%) replies were received, as mentioned above. From December 2007 to March 2008, special notification letters were sent out to 10.27 million people because their pension records were likely to be identified if participants provided further information. 74% of those contacted replied as at the end of December 2009. The SIA sent additional letters to encourage participants that did not reply to provide information, asking them to help in the error correction process. Without their cooperation, this process cannot be completed.

### *Moving towards e-Government*

Many countries are moving towards e-Government. Much information is released through the Internet and e-mails at both private and public levels. Governments also use these instruments more extensively than before. The Japanese Government has announced that governmental administration and registration procedures should use computer-cum-Internet systems more extensively in the coming years.

It is essential for the pension administration to keep valid correspondence addresses of all participants. The central government and municipal governments, in fact, collect

individual and household information on various occasions and events such as the time of birth, school enrolment, changes in employment, changes in employment status, medical examinations, hospitalization, passport issue, driver's license issue, marriage, divorce, death, change of address and tax payment. If the various levels of Government were able to share such information and consolidate it in the same database, it would be much easier to find and correct pension participants' valid addresses.<sup>11</sup>

Needless to say, the government needs to pay full attention to security and privacy issues in relation to the Internet and e-mail. In so doing, it would have to send sensitive information via postal mail or ask participants to access such information on the Internet in a strictly protected manner.

Under e-Government, pension participants will be able to access through the Internet their records on past pension contributions along with past monthly wages they received, so that errors can be quickly corrected. As the recent pension record problems in Japan reveal, individual records are not necessarily correct. In order to amend errors in the pension records, participants should keep their wage records and receipts of their public pension contributions for some years.<sup>12</sup> Under e-Government, companies would also be required to register all the relevant information through the Internet. Various types of information on each company could be consolidated into an individual company record. Assembling data on a company in this manner would make it difficult for companies to commit fraud in relation to pension records.

### *Integrated Collection of Taxes and Social Insurance Contributions*

Following the pension-record scandal, SIA in Japan was divided into two independent organizations. One is the National Health Insurance Association, which began operating in October 2008. The other is the Japan Pension Service (JPS), which was established in January 2010. According to the stipulations establishing the JPS, the agency is responsible for collecting and handling pension contributions. However, as a matter of comparative advantage, the tax bureau has more expertise in collecting various taxes and social insurance contributions.<sup>13</sup> In fact, in many countries, collection of social security contributions is delegated to the tax bureau.<sup>14</sup> As the tax bureau usually has more information on companies' profits and transactions, companies would have less room to evade pension contributions. From the employers' perspective, it is cost effective (that is, compliance costs are lower) when they pay taxes and pension contributions at the same time. Thus, it would be better in Japan, also, to move to integrated collection of pension contributions by the tax bureau.

### *Placing Much More Importance on Implementation*

The large number of floating pension records greatly angered the general public and

caused much distrust of members of parliament of the ruling parties. The members of parliament, in turn, were angry with and distrustful of government officials in the SIA. As a result, legislation was passed in June 2007 for the abolition of the SIA.

Following the legislation, as well as persistent and severe bashing, morale of SIA staff members plummeted. Many were weary from overtime work, and some had already quit their jobs, switching to careers outside the SIA.

The JPS, a special non-public entity, has taken over the management of pensions from the SIA since January 2010. The majority of SIA staff moved to the JPS, but 525 of them were fired at the end of 2009. It was as if the SIA staff had become the scapegoat.

There were two objectives in setting up the JPS. The first was downsizing: the number of JPS staff is to be reduced to 14,470 in 2012 (the SIA had 17,000 staff).<sup>15</sup> The second objective was to progressively use outside resources – that is, private companies – for the administration of pensions.<sup>16</sup>

The integrity of government officials in charge of pension matters ranging from system design to field operations has not been analysed in Japan. This is all due to the fact that the Japanese have long disregarded the issue of pension operations. It is becoming urgent to place much more importance on implementation issues.

## **6.7 Concluding Remarks**

Japan already has more than 35 million social security pension beneficiaries, amounting to nearly 30% of the total population. It has become normal for people to take pension benefits for granted.

There are three major issues with regard to social security pensions: design, coverage and implementation. The implementation issue has not been really analyzed, however, but its importance is growing, at least in Japan.

A serious pension record-keeping problem arose in Japan in May 2007. Namely, around 50 million social security pension records were found to be floating, not having been integrated into unified pension numbers. The pending records are due to human errors made by enrollees, their employers and agencies. There has been no integrated collection of taxes and social security contributions in Japan, and, additionally, there has been no effective monitoring in the field of pension administration. Government officials in Japan used to be regarded as the best and brightest, and thus too much reliance on the bureaucracy was observed in the past. The general public was under the illusion that government officials were able to do and did everything correctly, without making any mistakes. However, human errors are inevitable anywhere. Regular and prompt examination of possible errors is required for proper pension record-keeping. When a no-match is identified, interactive notification and corresponding corrections with confirmation should follow in due course. A government that people can trust and that is competent is thus the basis for any pension system.



## Endnotes

1. This is a slightly revised and extended version of Takayama (2009). The author is very grateful for the financial support from the academic project on Economic Analysis of Intergenerational Issues, funded by the Grant-in-Aid for Specially Promoted Research from Japan's Ministry of Education (grant number 22000001).
2. Ross (2004), for example, observed: "Making pension institutions operate effectively is an enormous challenge. Many things can and do go wrong.... In Western Europe, the United States and Japan, pension institutions, both public and private, work reasonably effectively." Similarly, McGillivray (2001) argued that employers' compliance with contribution regulations is considered to be high in Japan. However, he also warned that social security administrators are sometimes reluctant to admit they face compliance problems.
3. Imperfections in pension records have also surfaced in other countries such as the United States, the United Kingdom and Australia. In the United States, there are no-matches of about 8 million social security records (around 3.2% of the total) every year, and around 5 million letters containing social security statements are annually returned to the Social Security Administration because addresses are no longer valid. In stock terms, 275 million records were kept in the Earnings Suspense File in 2007 (see GAO 2005, and Olsen-Hudson 2009). Similarly, in the United Kingdom, there were about 1.9 million new non-matching pension contribution items in 2007 (around 3.5% of the total, and in stock terms, 118 million items remained in the suspense files (NAO 2009)). In Australia, around 6 million records were lost on members who quit their job or migrated abroad. For more information, see Bateman (2008).
4. The covered years under the different social security pension schemes are now added up in Japan, as in other countries.
5. Floating pension records were also seen in *private* pensions in Japan. In the case of contracted-out occupational pension funds, there were 1.44 million cases (about one-third of the total) in 2009 in which eligible pensioners who terminated the private pension before the normal retirement age were not paid. This is mainly due to the fact that their correspondence addresses were unknown. Other defined contribution plans of the 401(k) type, which were introduced in Japan in 2000, face the same difficulties, since the correspondence addresses of some 20,000 account-holders are unknown today.
6. Around 0.30 million records had no information on the insurees' birth date.
7. The government set up a third-party committee for pension record scrutiny that allows insurees to appeal when their pension records do not reflect their actual payment histories. There are difficulties, however, as a majority of people in Japan failed to keep their pay-slips or receipts of past pension contributions. Many no longer have any of the proof that is required for correcting their pension records. As of October 13<sup>th</sup>, 2010, the third-party committee had received 171,440 cases, had examined 148,970 cases (87%), and had only approved 64,975 cases (44%).
8. Cheating is not limited to underreporting of salaries. Intentional non-application to

the KNH scheme is not uncommon among new companies, and intentional dropping-out is common among business establishments facing severe financial stress. Furthermore, atypical employees are likely to be falsely reported as non-applicants to the KNH, even among large or medium-size companies.

9. Furthermore, the regular and active exchange of information on KNH pension records between program participants and the JPS will be most promising to diminish the number of reporting errors and frauds in pension implementation.
10. The SIA had a strong incentive to hide negative information such as errors and fraud. It was apt to think that if negative information became public, public criticism would destroy the reputation and credibility of the SIA, and that this would further increase the number of drop-outs from the social security pensions. Ultimately, however, this attitude made matters even worse when the pension-record keeping problems were uncovered and has caused irreparable damage to the pension system administration.
11. In Sweden, for example, all government registration information is pooled and consolidated or classified into an individual information account, which is administratively efficient, convenient, and cheaper than keeping separate databases.
12. This is already a common practice in many other countries. In France, for example, insurees are required to keep all receipts for 40 years, while in Italy, they are required to keep them for at least five years.
13. The administrative costs and compliance costs incurred in applying the KNH program to small-size businesses and those in financial distress are much more expensive. One way to minimize these costs is the integrated collection of tax and social security contributions through tax authorities. The Japanese National Tax Agency is a group of professionals for collecting taxes, and is extremely powerful and strict in executing its job.
14. See Sandford (1995) and Zaglmayer et al. (2005).
15. The number of *regular* staff is to be reduced from 13,940 in 2005 to 10,770 in 2012.
16. The following items are currently outsourced: the processing of various application forms and documents; the initial screening of application forms; answering calls to reply to pension- and health insurance-related questions; public awareness campaigns for social security pension systems, measures to encourage pension participants to pay their contributions and help those who can apply for payment exemptions; and general administrative work such as the calculation of JPS staff salaries, the provision of fringe benefits, and the maintenance of facilities.

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Social Security Reforms and Labor Force Participation of the Elderly in Japan

研究分担者 小塩 隆士 （一橋大学経済研究所・教授）

研究協力者 大石亜希子 （千葉大学・准教授）

研究協力者 清水谷 論 （世界平和研究所・主任研究員）

研究要旨

日本で過去 40 年間行われてきた公的年金改革が、高齢者の労働力率にどのような影響を及ぼしたかを定量的に分析する。そのために、まず、総務省『労働力調査』など公表された集計データを用いることにより、公的年金の引退促進効果を動学的な枠組みで捉える。次に、これまでの公的年金改革がその引退促進効果をどのように変化させ、そして高齢者の労働力率にどのような影響を及ぼしたかを試算する。

A. 研究目的

日本の公的年金改革が高齢者の就業行動に及ぼしてきた効果を定量的に分析する。

に、過去 40 年間進められてきた公的年金改革の影響を 3 指標に反映させ、上記回帰式にもとづいて高齢者の就業率への影響を試算する。

B. 研究方法

総務省『労働力調査』など公表された集計データを用いることにより、公的年金の引退促進効果を動学的な枠組みで捉える。具体的には、第 1 に、公的年金の生涯純受取額（現在価値）を「社会保障資産」（SSW）と定義し、そこから派生的に導出される「社会保障資産発生額」（1 年引退を先送りすることによる SSW の変化額）、「ピーク・バリュー」（SSW の最大値と現時点で引退するときの SSW の差）、「オプション・バリュー」（引退年齢の調整によって得られる生涯効用の最大値と現時点で引退するときの生涯効用の差）という 3 つの指標を、各時点の年金制度を反映させる形で具体的に計算する。第 2 に、これら 3 指標やそのほかのマクロ変数に基づき、高齢者の労働力率を説明変数とする回帰式を計算する。第 3

（倫理面への配慮）

公表された集計データのみを使用しているため、配慮の必要性は特にない。

C. 研究結果

第 1 に、1985 年以降の公的年金改革は、社会保障資産発生額、ピーク・バリュー・オプション・バリューという 3 指標から判断して、高齢層の就業行動を促進してきた。

第 2 に、それら 3 指標と高齢者の就業行動の関係を回帰式で分析すると、なかでもオプション・バリューが公的年金と高齢者の就業行動の関係を整合的に説明することが分かる。

第 3 に、実際に、1985 年以降の公的年金改革が高齢者の労働力率に及ぼす影響を試算すると、そ