



Greece

Report to the Ministry of Labour, Social Security and Social Solidarity

**Peer Review of the actuarial study of the main
social insurance pension schemes of
IKA-ETAM, Public Sector, OAEE and OGA,
2015-2060**

**Public Finance, Actuarial and Statistics Services Branch
Social Protection Department
International Labour Organization – Geneva**

Foreword

At the request of the Greek Government, the Public Finance, Actuarial and Statistics Services Branch of the Social Protection Department of the International Labour Organisation (ILO SOC/PFACTS) agreed to undertake a peer review of the actuarial study of the main social insurance pension schemes in Greece. The above agreement is part of long-standing technical co-operations between the ILO and the Government of Greece, which were initiated in 2005 in the early years of the establishment of the National Actuarial Authority of Greece (NAA).

This statement presents the results of an ILO's peer review of the actuarial study of the main four social insurance pension schemes undertaken by the NAA. The peer review contains observations on the following key questions:

- Has the work been completed in compliance with the professional standards of actuarial practice?
- Did the NAA have access to the information required to perform the assessment, and were relevant tests and analysis on the data completed as might be expected?
- Were the actuarial methods and assumptions used in completing the study reasonable?
- Does the actuarial study communicate fairly the results of the work performed by the NAA?

The present document is limited to a technical peer review and it is not intended to review the reform policy of the national social insurance pension system.

Actuarial reviews of national social security schemes play a central role in assessing financial sustainability of the schemes. Peer reviews have been more widely accepted in order to ensure the quality of actuarial reviews as seen in the International Standard of Actuarial Practice 2 (ISAP2) of the International Actuarial Association (IAA).

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Acknowledgements

The Director General of the ILO designated the Public Finance, Actuarial and Statistics Services Branch of the Social Protection Department of the International Labour Organisation (ILO SOC/PFACTS) to carry out a peer review of the actuarial study of the main social insurance pension schemes in Greece. Mr Costas Stavrakis, a senior social security actuary and pension specialist of the ILO SOC/PFACTS, has conducted the peer review with the assistance of Mr Andrés Acuña-Ulate, a social security actuary of the ILO SOC/PFACTS under the supervision of Mr Hiroshi Yamabana, a senior social security actuary and Ms Anne Drouin, Chief of the ILO SOC/PFACTS.

1. Introduction

The NAA actuarial study of the main social insurance pension schemes includes following results:

- Projected annual expenditure of the main social insurance pension schemes from 2015 to 2060, expressed as percentage of GDP; and
- Projected annual net cash flows, i.e., differences between contributions and earnings-related part of pension expenditure, when the new pension system matures, from 2051 to 2060, expressed as percentages of GDP.

It must be emphasized that these results are not predictions. They present the outcomes if all the assumptions were to come true in the future. The parameters involved, such as fertility rates, net migration rates, mortality rates, invalidity incidence rates, rates of labour force participation, retirement rates, rates of inflation and real rates of wage growth, cannot be predicted accurately over the entire projection period. However, the estimates provide guidance to the financial planning and management of the social insurance pension schemes.

The main social insurance pension system in Greece includes the following four schemes, namely (i) IKA-ETAM; (ii) Public Sector Scheme (PS); (iii) OAEE, and (iv) OGA. The above four schemes, on aggregate, cover 93 per cent of the total insured population. The compilation of data and information on each of the above four schemes, necessary for the ILO peer review, was done under the supervision of Ms Effrosyni Kouskouna, the Chairperson of the NAA. The ILO wishes to express its sincere thanks to the Chairperson of the NAA for the excellent collaboration and assistance during the exercise.

The key objectives of the peer review are to ensure that the methodologies and assumptions used in the actuarial study are appropriate and that the data used for the actuarial study are sufficient and reliable. This peer review highlights major peer review findings of the ILO on the actuarial study of the main four social insurance pension schemes carried out by the NAA in April 2016 under the status-quo as well as the reform scenarios. Assistance of the ILO has been provided to the NAA with regards to refinements of the fine-tuned actuarial pension model.

2. Professional requirements

The peer review takes into account the International Standard of Actuarial Practice 2 (ISAP2) of the International Actuarial Association (IAA), which refers to the Financial Analysis of Social Security Programs¹, as well as the Internal guidelines for the actuarial analysis of a national social security pension scheme published by the ILO SOC/PFACTS².

The actuarial study was undertaken by five executive board members of the NAA, namely G. Chelidonis, E. Kouskouna, M. Papamichael, M. Spanopoulou and A. Zoulaki. The professional certification of the above team, combined with their extensive working experiences in the conduct of social security actuarial studies and in-depth knowledge and expertise in the use of ILO actuarial model, satisfies professional requirements for undertaking the actuarial study.

3. Data collection and analysis

Scheme-specific data were extracted and compiled by the four pension schemes, based on the standard input data requirements of the ILO pension model. The data collected of the year 2013 is the same used for the 2015 Ageing Working Group (AWG) exercise of the Economic Policy Committee (EPC). The administrative databases of the four pension schemes include data of active insured population, the distribution of insurable wages, the distribution of past credited services and pensions in payments, disaggregated by age and sex.

Checks and calibrations were performed by the NAA on the 2013 data in order to ensure consistency with the 2015 financial statements of the four schemes.

All the four schemes possess sufficient data.

Summaries of scheme designs of the current status-quo as well as the reforms have been communicated to the ILO SOC/PFACTS in Greek. Direct communications also took place between the NAA and the ILO SOC/PFACTS to clarify key scheme provisions under status-quo and reform scenarios. A copy of the legal provisions of the reform in the law N.4336/2015 as well as in a draft national law was provided to the ILO SOC/PFACTS on 22 April, 2015. The presence of a Greek-speaking actuary in the ILO SOC/PFACTS ensures the correct understanding of the scheme provisions.

4. Methodology

An ILO pension model fine-tuned to the Greek schemes was used for the actuarial projections.

The ILO generic pension model carries out projections by age, sex and cohort of the numbers of contributors and pensioners and the average amount of contributory wages and pensions, based on the pension scheme design and parameters, the starting data and the actuarial assumptions. In each projection year, the numbers of contributors and pensioners by age and sex are adjusted by using transitional probabilities such as mortality rates. The

¹ http://www.actuaries.org/CTTEES_ASC/isaps/pdf/isap2.pdf

² http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---soc_sec/documents/genericdocument/wcms_205314.pdf

age- and sex-wise average insurable wages are adjusted in line with the economic development while the age- and sex-wise average pensions are adjusted in line with the pension indexation rate. The number of newly awarded pensioners and the average amount of newly awarded pensions for each cohort are calculated by taking into account transitional probabilities such as the retirement rates, the pension formulae, the average insurable wages and the average contribution period. **This methodology allows the pension model to measure properly the financial impact of pension reforms with transitional arrangements over periods and is a standard actuarial projection methodology for social insurance pension schemes.**

The ILO generic pension model has been fine-tuned for each pension scheme in Greece by taking into account the pension scheme designs of the current status-quo situation as well as the reform scenario.

Modifications to the ILO generic pension model have been carefully reviewed during the programming process and the consistency checks of the results have been produced. **It is reasonable to conclude that any remaining inaccuracies caused by the modifications to the model, if any exist at all, have a minor impact on the results produced.**

5. Assumptions

The actuarial projections of the main social insurance schemes require demographic and macroeconomic assumptions and a set of assumptions specific to the four schemes.

With regards to the demographic and macroeconomic assumptions, the actuarial study relies on the framework used for Greece by the Ageing Working Group (AWG) of the Economic Policy Committee (EPC) in its last AWG exercise of 2015. That framework, which was determined at the end of quarter two of 2014, adopted 2013 as the base year. Number of the population and labour force participation rates by age and sex, as well as macroeconomic assumptions of the actuarial study, such as GDP growth, labour productivity growth, inflation and the unemployment rate, are the same as those in the AWG exercise.

The actuarial projections of the present study are based on demographic and macroeconomic assumptions considered appropriate up to the date of their determination, namely June 2014. Short-term deviations of the projection results, for example, the income of the pension schemes for the next couple of years which could have major implications on the overall annual deficit level of the Greek Government in the near future, could take place in case of the slower recovery of the economy, the employment and the salary base for social security contributions. However, impacts of those short-term deviations will not affect much the long-term financial projections.

The same demographic and macroeconomic framework is used for both the status quo and reform scenario. As the reform scenario includes provisions for increasing the retirement age and thus may lead to increased labour force participation rates in the future, the financial projection result of the reform scenario is deemed as rather conservative.

Scheme-specific assumptions, such as the age distribution of new entrants, the retirement rates, the family structure of the insured population and the disability incidence rates, were determined based on the scheme provisions and recent experiences of the four schemes. Conservative assumptions were adopted where there were uncertainties such as future retirement behaviour in response to the future planned increase in the retirement ages. Difference assumptions were used under status-quo and reform scenarios in order to reflect the expected evolutions.

It is concluded that demographic and macroeconomic assumptions are appropriate for long-term projection despite possible short-term deviations.

Scheme-specific assumptions of the four pension schemes take into account recent experiences of the four pension schemes and are conservative for uncertainties and concluded as prudent.

6. Communication of results

The actuarial report prepared by the NAA is a very informative document. It includes details, and useful tables and charts. The report is written in Greek that is accessible for its intended users.

Sensitivity tests with respect to insurable earnings, based on which contributions are made and pension benefits are determined with respect to OAEE and OGA insured persons, illustrates in a clear manner the sensitivity of results to those crucial parameters.

Appendix. Peer review conclusion statement

The actuarial study of the main social insurance pension schemes uses sufficient and consistent data, and applies appropriate projection methods and assumptions. The overall projection results of the actuarial study are consistent and reasonable.

On behalf of the ILO:

A handwritten signature in blue ink, appearing to read 'Stavrakis', with several long, sweeping horizontal strokes underneath.

Costas Stavrakis, FIA, FCAA