Actuarial Study for the Period 2016-2026

ILO Staff Health Insurance Fund (SHIF)

Final Report

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About this document

The ILO has appointed Aon Hewitt to conduct an actuarial study of the Staff Health Insurance Fund ("SHIF"). This report presents the results of our actuarial study as of January 1, 2016 with projection results for the period 2016 - 2026. The study includes an analysis of the experience of the SHIF during the period 2012 to 2015, which has been used to establish the assumptions for the actuarial study. We outline how the study has been conducted, describe the basis used to project the financial situation of the SHIF and present our findings and conclusions.

We thank the SHIF for its confidence.

Sincerely,

Aon Hewitt

Bart Breemans

Russell Berns

Table of contents

1. Executive summary

1.1. Executive summary

To ensure that the SHIF remains solvent in the future, the SHIF has appointed Aon Hewitt to conduct an Actuarial Study to project the cash flow and the resulting Guarantee Fund during a 10-year projection period starting on January, 2016.

The projection is based on census data effective 31-12-2015 as well as historical data on contributions and cash flow. The historical data have been used in setting the assumptions for the actuarial study, together with assumptions for the After Service Health Insurance calculations produced for the United Nations' financial statements. Preliminary assumptions were proposed to the SHIF Management Committee, who has decided on the final assumptions for this Study.

The projection of the SHIF Guarantee Fund shows the following key results:

- Currently, the contributions still exceed the benefit reimbursements and the Guarantee Fund is close to the upper band of the Guarantee Fund corridor. This is in part due to favorable variations in exchange rates, which have had a positive impact on the net cash flows.
- However, the projections show that, with the assumptions used in the calculations, the claims reimbursements will soon exceed the contributions and the gap will widen quickly, resulting in a fast deterioration of the Guarantee Fund. The main reason for the rapid increase in claims reimbursements is the projected ageing of the (especially inactive) population. This ageing, combined with assumed claims costs that increase very strongly with age, results in a rapid increase of the overall claims.
- Under the base-line scenario, the Guarantee Fund will decrease rapidly and go below the lower band of the corridor in 2024. Note that the increase in contributions as of January 2017 has already been taken into account—if this increase had not taken place, the Guarantee Fund would go lower than the lower corridor band already in 2022.
- In addition to the base-line scenario, we have analyzed the impact of variations on the assumptions of contribution rates, medical inflation, asset return and population growth. Projections under the base-line and all of the scenario variations except for one show that the SHIF Guarantee Fund is expected to drop below the minimum threshold within the 10-year projection period.
- The scenario to decrease the medical inflation assumption by 100 basis points is the only variation included in this study that shows a result where the SHIF Guarantee Fund is expected to remain above the minimum threshold through 2026. However, even under this scenario, there is a downward trend of the Fund in the later years of the projection due to significantly higher claims reimbursements than contributions.

2. Introduction

2.1. About Aon Hewitt's mandate and approach

2.1.1. Aon Hewitt's mandate

To ensure that the SHIF remains solvent in the future, the SHIF has appointed Aon Hewitt to conduct an actuarial study to project the cash flow and the resulting Guarantee Fund during a 10-year projection period.

The actuarial study should meet the following requirements:

- Use census data at the end of 2015 (i.e. start of 2016);
- Show projected growth in the SHIF's expenditure for the period from 2016 – 2026 and the resulting impact on the SHIF Guarantee Fund;
- In addition to a base-line scenario, show the impact of variations to the base-line assumptions in additional scenarios as defined by the SHIF.

Similar studies have been performed in the past. The last one was as of January 1, 2013, covering a projection period from 2014 to 2023.

2.1.2. Meetings

2.1.2.1. January 31, 2017 meeting

In the meeting of January 31, 2017, Aon Hewitt presented the results of the base-line scenario with preliminary base-line assumptions. The SHIF Management Committee confirmed the preliminary assumptions and decided on the additional scenarios for the 2016-2026 SHIF study. These additional scenarios are:

- Scenario 1—assume that the contribution rates did not increase as of 1-1-2017
- Scenario 2—variations in medical increase rate impacting the projected future medical claims
- Scenario 3—variations in asset return of the SHIF Guarantee Fund
- Scenario 4—reduction in headcount by hiring fewer new entrants to replace leaving staff members during the projection period

2.1.2.2. April 7, 2017 meeting

In the meeting of April 7, 2017, Aon Hewitt presented the results of the additional scenarios to the SHIF Management Committee.

2.1.3. Aon Hewitt's approach

As part of this assignment, Aon Hewitt provided the SHIF Committee with advice during the actuarial assumptions setting process. The ILO selected the assumptions and prescribed them for use for purposes of projecting forward the population, claims and contributions over the next ten years. Aon Hewitt also collected other necessary data from the ILO such as census data, historical medical claims incurred and financial information as of December 31, 2015. While we cannot verify the accuracy of all the information supplied, it was reviewed for consistency and reasonability. As a result of this review, we have no reason to doubt the substantial accuracy or completeness of the information and believe that it has produced appropriate projection results.

Based on the prescribed assumptions and other data provided by the SHIF Secretary, Aon Hewitt performed population and cash flows projection analysis over the future 10-year period in accordance with generally accepted actuarial principles and practices. Determinations for purposes other than understanding potential future cash flows of the SHIF Guarantee Fund may be significantly different from the results reported herein. Thus, the use of this report for purposes other than those expressed here may not be appropriate. Furthermore, a cash flow projection conducted based on different assumptions, census and/or financial information may yield significantly different results. The SHIF Committee instructed Aon Hewitt on which assumptions to conduct a sensitivity analysis and results using these alternative assumptions are presented in various sections of this report.

The undersigned are familiar with the near-term and long-term aspects of pension valuations and projections and meet the relevant qualification standards necessary to render the actuarial opinions herein. All of the sections of this report are considered an integral part of the actuarial opinions.

2.2. The SHIF and its funding

2.2.1. The SHIF

- The Staff Health Insurance Fund (“SHIF”) is a health insurance entity covering (current and former) staff members of the International Labour Organization ("ILO") as well as their spouses, children and surviving beneficiaries.
- The SHIF is a self-administered fund.
- The purpose of the SHIF is to finance the health benefits of the SHIF members.
  - For this purpose, the SHIF receives contributions from members and from the ILO
    - The contribution rates were increased as of January 1, 2017.
  - The SHIF pays the benefit claims by the members and their covered family.

2.2.2. Funding policy

- The SHIF’s solvency is maintained through a Guarantee Fund, whose year-end amount must be between 1/6th and 1/2nd of total benefits paid over the last three-year period.

3. Historical information and census data

3.1. Trend in number of SHIF members / census data

We received information from the ILO about the SHIF membership at the end of 2015. The tables below show a summary of the data, combined with historical information.

3.1.1. Trend in number of paying SHIF members

The table shows a decrease in active staff and increase in number of inactive members, resulting in a significant increase in the ratio of inactives/active staff.

Trend in the number of paying SHIF members

Number of paying members at year-end	2012	2013	2014	2015	Increase
Active staff	3,274	3,045	3,148	3,159	-3.5%
Retirees	1,847	1,835	1,880	1,911	3.5%
Surviving spouses	364	405	408	406	11.5%
Total	5,485	5,285	5,436	5,476	-0.2%
Ratio inactives/actives	68%	74%	73%	73%	8.6%

3.1.2. Census data

The table below shows the census data as of 31-12-2015 / 01-01-2016 and compares these data with those used in the prior actuarial study. While the ratio of inactives to active staff members has increased, there has not been a significant change in the average age or percent male of each of the three categories of paying members since the prior actuarial study.

Census data

	As of 01-01-2013				As of 01-01-2016			
	Total Number	Average Age	Average Service	Percent Men	Total Number	Average Age	Average Service	Percent Men
Active staff	3,274	45.1	9.3	46	3,159	45.5	9.5	46
Retirees	1,847	72.5	-	53	1,911	73.2	-	52
Surviving spouses	364	76.1	-	4	406	77.0	-	5
Total	5,485	56.5	-	46	5,476	57.5	-	45

The table below splits the active staff headcount and average salary used in this actuarial study by age and sex. On average, there is a noticeably higher salary for older staff members.

Average salary for active staff members by age and sex

	Headcount as of 01-01-2016			Average Salary as of 01-01-2016		
	Males	Females	Total	Males	Females	Total
Age						
less than 30	48	107	155	44,069	42,426	42,935
30-34	132	210	342	56,374	55,965	56,123
35-39	209	278	487	68,467	72,522	70,782
40-44	245	314	559	92,224	95,914	94,296
45-49	247	263	510	116,095	114,294	115,166
50-54	274	237	511	137,970	122,133	130,625
55-59	188	222	410	148,991	129,934	138,672
60+	110	75	185	158,975	136,786	149,980
Total	1,453	1,706	3,159	109,042	96,530	102,285

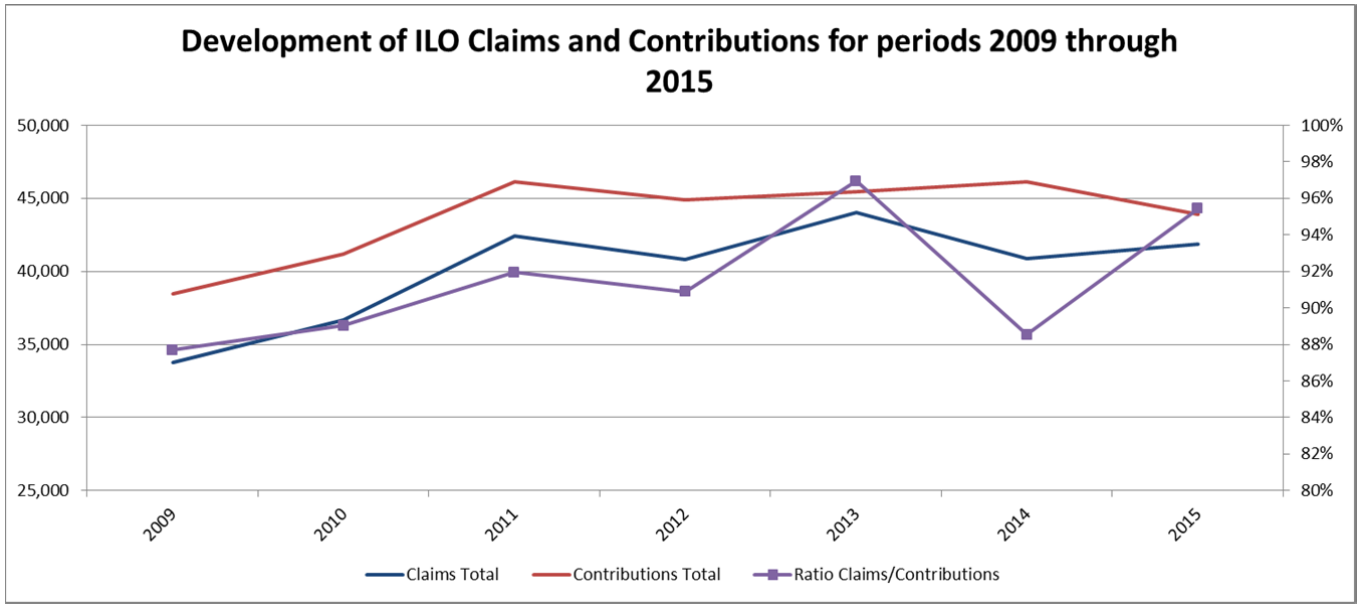
3.2. History of contributions and expenditure

The following graph shows the historical development of the claims and contributions of the SHIF from 2009 to 2015.

While the graph shows significant volatility in the ratio of the claims over the contributions each year, there is an upward trend in the ratio of reimbursements over contributions in the last 7 years.

The volatility is partially due of significant fluctuation in the most relevant exchange rates for the SHIF Guarantee Fund (EUR, USD, CHF), as there is a mismatch between the currency in which claims are reimbursed and the currency of the contributions.

USD x 1,000

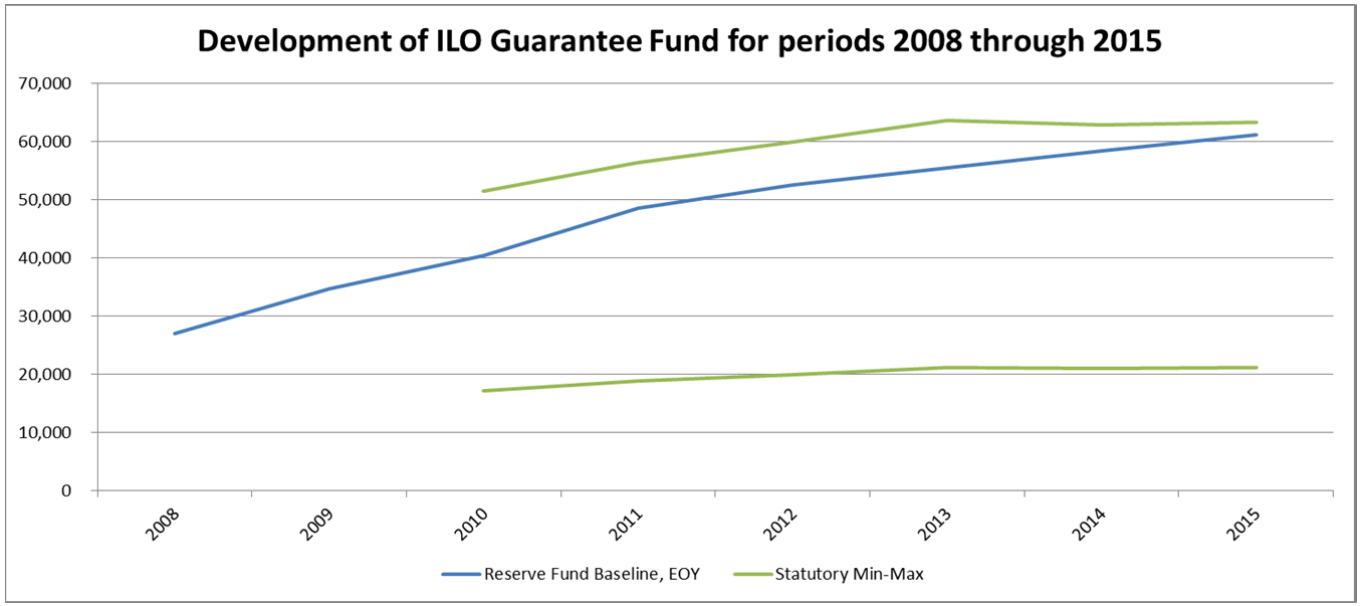


3.3. History of Guarantee Fund

The blue line on the graph below shows the development of the SHIF Guarantee Fund from 2008 to 2015 in comparison with the upper and lower bands of the “corridor” defined in the SHIF funding policy.

The Guarantee Fund has been increasing in recent years and is approaching the upper band of the “corridor”.

USD x 1,000

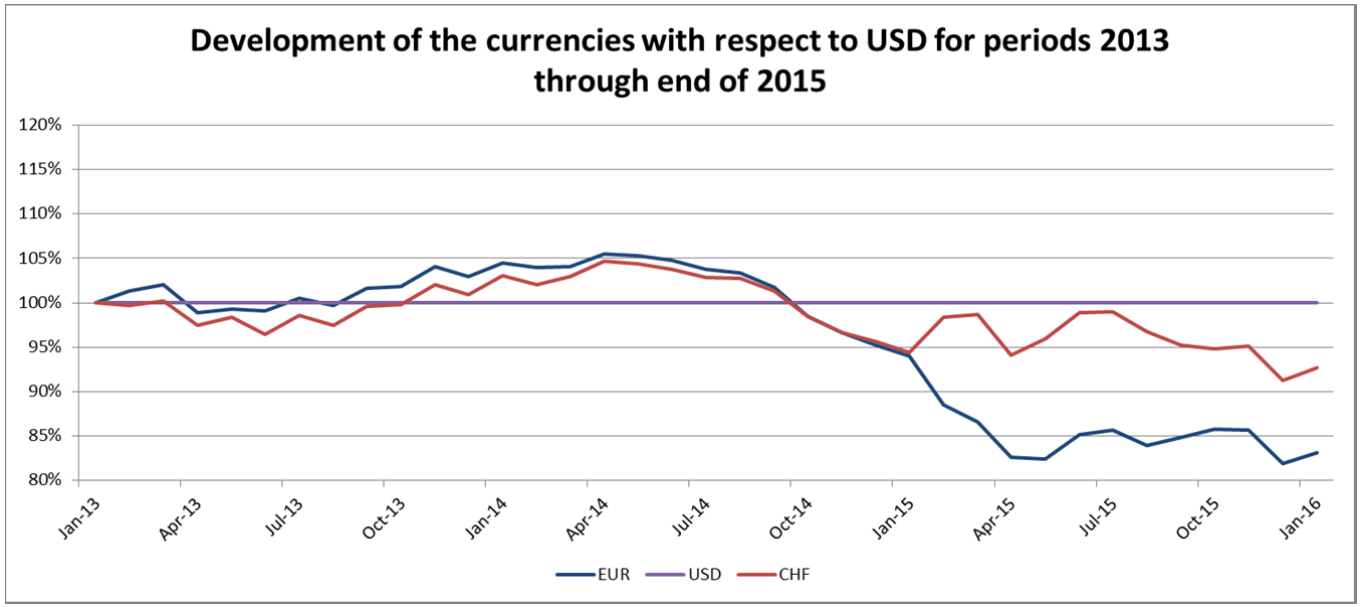


3.4. Impact of exchange rates

The contributions are levied on the salaries, which are linked to different currencies, and the claims are also paid in various currencies. The distribution of contributions and claims among the currencies differ. Therefore, the exchange rates have a significant impact on the development of the Guarantee Fund.

The graph below shows the movements in the main exchange rates that affect the SHIF. It shows the significant appreciation of the USD compared to the CHF and EUR, especially during 2015.

3.4.1. Historical exchange rates



The distribution of the claims by currency since 2012 and the impact of the exchange rate changes is provided in the chart below.

3.4.2. Claims by exchange rate group

Historical view of claims reimbursements by exchange rate group

All amounts are in USD x 1,000	2012	2013	2014	2015
Original exchange rates				
Claims in CHF	24,911	27,532	27,357	27,463
Claims in EUR	6,638	6,792	6,753	6,328
Claims in USD	2,055	1,744	1,310	1,907
Claims in other currencies	7,186	7,147	6,248	5,819
Total	40,790	43,215	41,668	41,517
At 31-12-2015 exchange rates				
Claims in CHF	23,334	25,514	24,887	26,648
Claims in EUR	5,592	5,564	5,507	6,193
Claims in USD	2,055	1,744	1,310	1,907
Claims in other currencies	5,674	5,691	5,273	5,426
Total	36,655	38,513	36,977	40,174
Percentage difference				
Claims in CHF	-6.3%	-7.3%	-9.0%	-3.0%
Claims in EUR	-15.8%	-18.1%	-18.5%	-2.1%
Claims in USD	0.0%	0.0%	0.0%	0.0%
Claims in other currencies	-21.0%	-20.4%	-15.6%	-6.8%
Total	-10.1%	-10.9%	-11.3%	-3.2%

4. Calculation methodology and tools

4.1. Aon Hewitt's actuarial model

Aon Hewitt has developed a **sophisticated actuarial model** to project future expenditure and contributions for health insurance plans of intergovernmental organizations. We have successfully applied this model for similar projections in the past. This model has the following features:

- It is an **open group model**, i.e. it takes into account new entrants either to simply replace staff members leaving the active workforce because of death, disability, retirement, withdrawal, or to reflect growth of the organization;
- It is **deterministic**, i.e. it uses specific assumptions to project expected future cash flows;
- It takes into account **different contribution rates** depending on the status of the insured person (single, married, married with children) by applying an assumption reflecting the probability of being single, married, married with children at each age. This assumption was developed as part of the experience study.
- The model also takes into account standard **actuarial decrement rates** (death, disability, withdrawal, retirement/early retirement) and includes **financial assumptions such as salary increases, claims costs, medical inflation, etc.**
- It is **flexible** and easy to run, so we can quantify the impact of varying changes in assumptions on the projection results.

4.2. Benefit plan definition—contributions and benefits

4.2.1. Benefit provisions

While there have been changes in the benefit provisions (e.g. medical claim reimbursement levels, etc.), we are not aware of any significant changes in benefits that would affect the future medical claims cost assumption.

4.2.2. Contributions

The contribution level, however, has been changed. As of January 1, 2017, the contribution level was increased by about 7.5%, i.e. the contributions for current staff members increase from 6.60% to 7.10% (sum of staff member and ILO contributions).

This increase has been reflected in the base-line scenario of this Study.

4.3. Assumptions

As the focus of this study is a 10-year projection of the contributions and claims, we have used an array of assumptions. According to generally accepted actuarial guidelines, each assumption should reflect the best estimate of the future value for that assumption. In addition, the assumptions should be internally consistent.

4.3.1. Experience study

Often, analysis of historical experience is used to determine the forward-looking assumptions, as past experience is often a good predictor for the future. However, this is not always the case, so it is necessary to review whether the assumptions based on past experience should be further adjusted to reflect any difference in future expectations.

Our general approach for setting assumptions has been as follows:

- We have applied many assumptions from the most recent actuarial valuation of the after-service health insurance ("ASHI") benefits;
- As the claims cost assumption for the ASHI actuarial valuation only reflected the after-service medical benefits, we have conducted an experience study of the medical claims (including those for actives) to determine a future claims cost assumption for all SHIF members, actives and inactives.
- We analyzed the pattern of recent new entrants and determined a distribution of age, sex and salary profiles for new entrants based on this analysis.

The assumptions can be grouped in four categories:

- Economic assumptions
- Demographic assumptions
- Medical assumptions
- Open group assumptions

Below, we provide more information on the assumptions— Detailed tables can be found in section 7.5 Appendix 5— SHIF projection assumptions of this report.

4.3.2. Overview of assumptions

Assumption	SHIF assumptions 1-1-2013 base-line	SHIF assumptions 1-1-2016 base-line	Comments
1. Economic assumptions			
Consumer price inflation	2.0%	1.5%	Based on “Consensus Forecasts” and other market information.
Indexation of pensions in payment	Same as inflation	Same as inflation	
Expected return on plan assets	Inflation + 0.5% = 2.5%	Inflation + 0.5% = 2.0%	
Salary increase rate	Inflation + 1.5% = 3.5%	Inflation plus 0.5% plus age-related rate from ASHI	Following changes made for ASHI
Exchange rates	Rates at beginning of 2013, projected to remain level during the projection period	Rates at beginning of 2016, projected to remain level during the projection period	
2. Demographic assumptions			
Turnover rates	Sex distinct age graded table	Same	2015 ASHI turnover rates

Assumption	SHIF assumptions 1-1-2013 base-line	SHIF assumptions 1-1-2016 base-line	Comments
Disability rates	Sex distinct age graded table	Same disability tables, but weighting of GS and PS tables based on current headcount split	
Retirement rates	2011 UN retirement tables, separate rates by job type, NRA and M/F, 50% / 50% weighting of general and professional service tables for age 62 NRA	2013 UN retirement tables and weighting of GS and PS tables based on current headcount split	Following ASHI trend
Mortality rates	UN Mortality table with projected improvements from base year 2007 to 2011	UN Mortality table with projected improvements from base year 2007 to 2033	Following ASHI trend
Coverage status	Determined by participant age and distribution of actual coverage status distribution of current participants	Same	
Percent of actives who elect retiree coverage	100%	97.5%	Following ASHI approach
Marital status	75% of males, 25% of females are married	Same	
Spouse age difference	5 years	Same	

Assumption	SHIF assumptions 1-1-2013 base-line	SHIF assumptions 1-1-2016 base-line	Comments
3. Medical assumptions			
Medical inflation—initial	Inflation + 2.0% = 4.0%	Inflation + 2.0% = 3.5%	
Medical inflation—ultimate	Inflation + 1.0% = 3.0%	Inflation + 1.0% = 2.5%	
Year ultimate medical inflation reached	2020	2023	
Claims cost	Weighted average of four years history w/ sample family rates based on participant age: $2,108 at 30, $9,345 at 65, $20,999 at 90	Updated weighted average of four years' history: $1,697 at 30, $8,305 at 65, $24,272 at 90	Taking into account both active and inactive claims.
Administrative expenses	Not included in claims	Not included in claims	
IBNR	Average IBNR over past 4 years	Average IBNR over past 4 years	

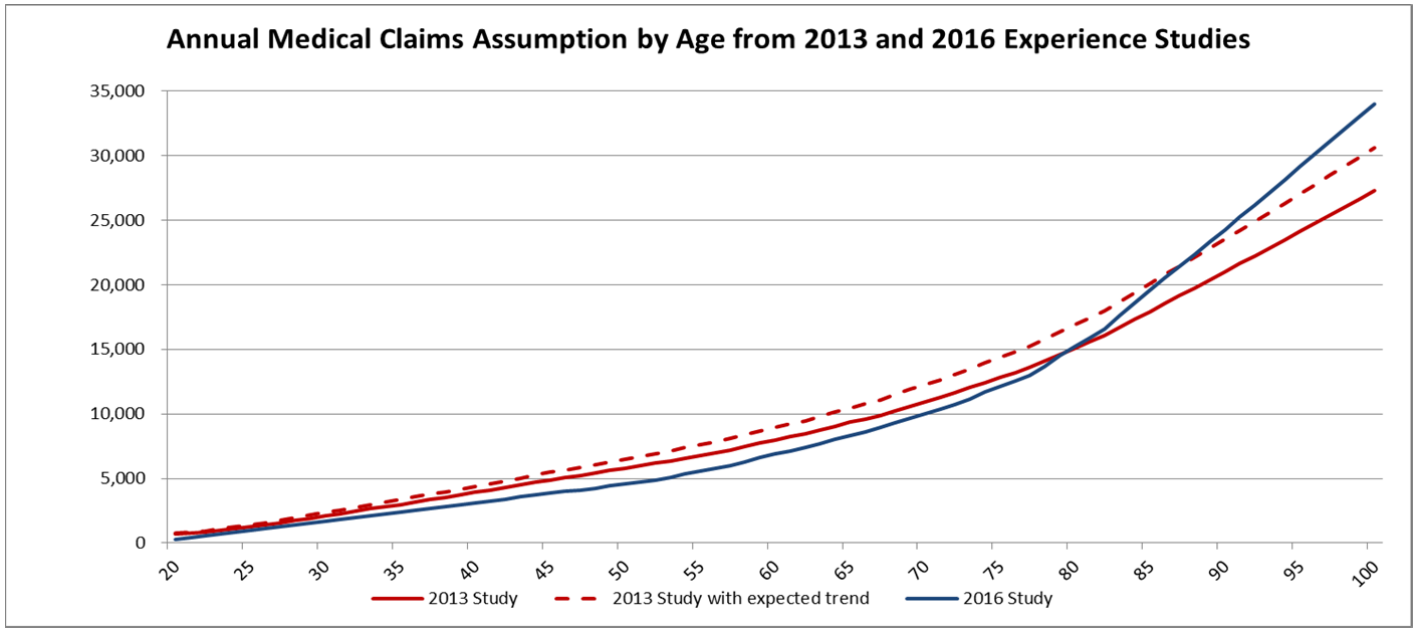
Assumption	SHIF assumptions 1-1-2013 base-line	SHIF assumptions 1-1-2016 base-line	Comments
4. New entrant profile			
Age / Sex / Salary distribution	Weighted average similar to new hires within the past two years	Same	
Population growth	0%	0%	
General salary projection	Inflation	Inflation	

4.3.3. Claims cost—results of experience study

The graph below shows the assumed medical claims cost, which is the result of the experience study of historical claims costs conducted by Aon Hewitt. The claims costs, expressed in USD, have decreased for younger ages since 2013, primarily because of the appreciation of the USD over the CHF (most of the claims are paid in CHF).

Note that the detailed numbers of this claims cost assumption can be found in section 7.4 Appendix 4— Claims cost—results of experience study.

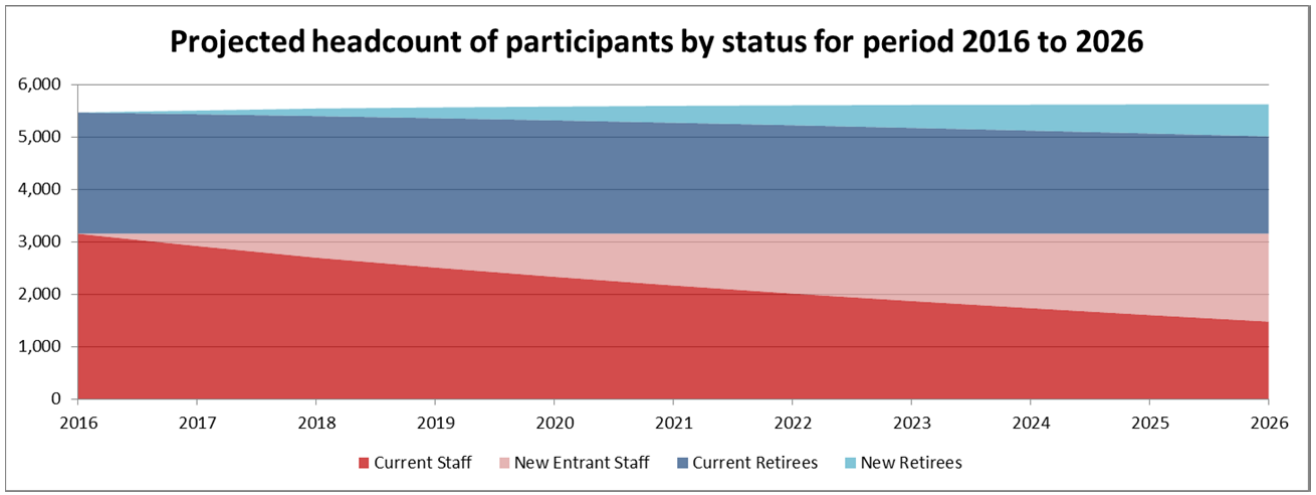
USD x 1



5. Demographic projection results—base-line scenario

5.1. Projected headcount

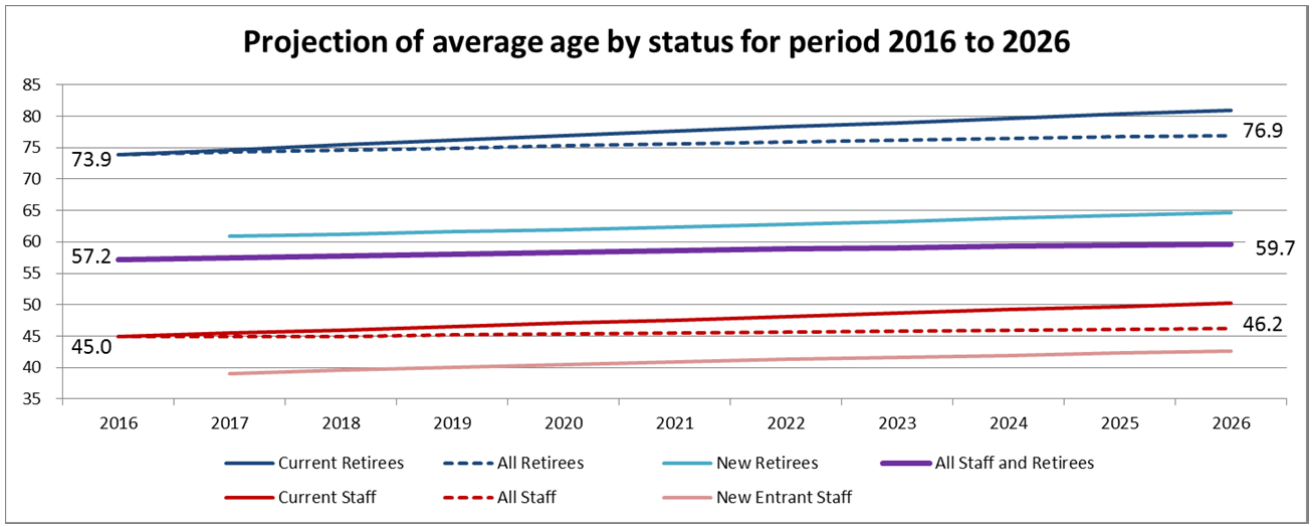
The graph below shows the breakdown of the headcount in our 10-year projection between staff members (current and future active staff) and retirees (current and new retirees) under the base-line scenario, where the total number of active staff members remains constant. The graph shows that the number of new entrants is quite significant and that the demographic profile assumptions for these new entrants are, therefore, quite important for the projection.



5.2. Average age

The graph below shows the projection of the average age, separately for staff members and retirees, and the average ages notated in the chart show the increase in average age for the full group of staff members and retirees/beneficiaries each year (purple and dotted red/blue lines).

The demographic projection, which is based on the assumptions outlined in section 3.3., shows a significant increase in the average age of all of the member categories.



6. Financial projection results

6.1. Baseline Scenario

6.1.1. Description of scenario

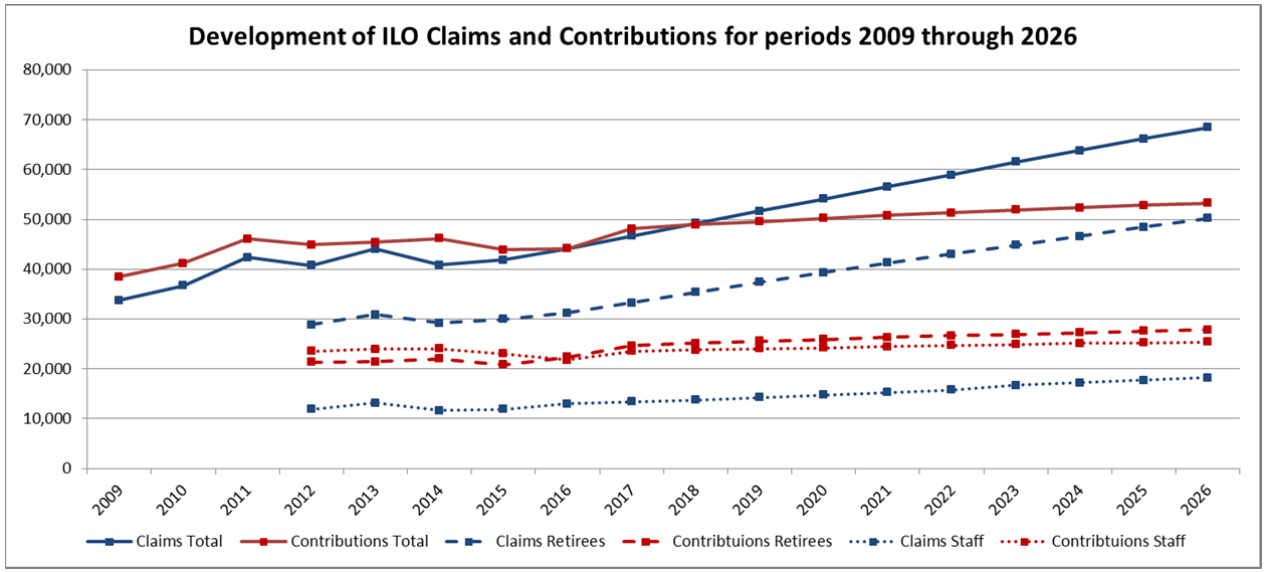
The base-line scenario is based on the current benefit provisions and contribution levels and on the assumptions described in Section 4.3 Assumptions.

6.1.2. Contributions and expenditure

The graph below shows the projection of claims and contributions, split between staff (dotted lines) and retirees (dashed lines) as well as the total amounts (solid lines). The claims for the retirees are noticeably assumed to increase rapidly, mainly because of the ageing of the inactive population combined with the rapid progression of claims cost as the age increases.

There is a noticeable increase in contribution in 2017 due to the rate increase as of January 1, 2017.

USD x 1,000

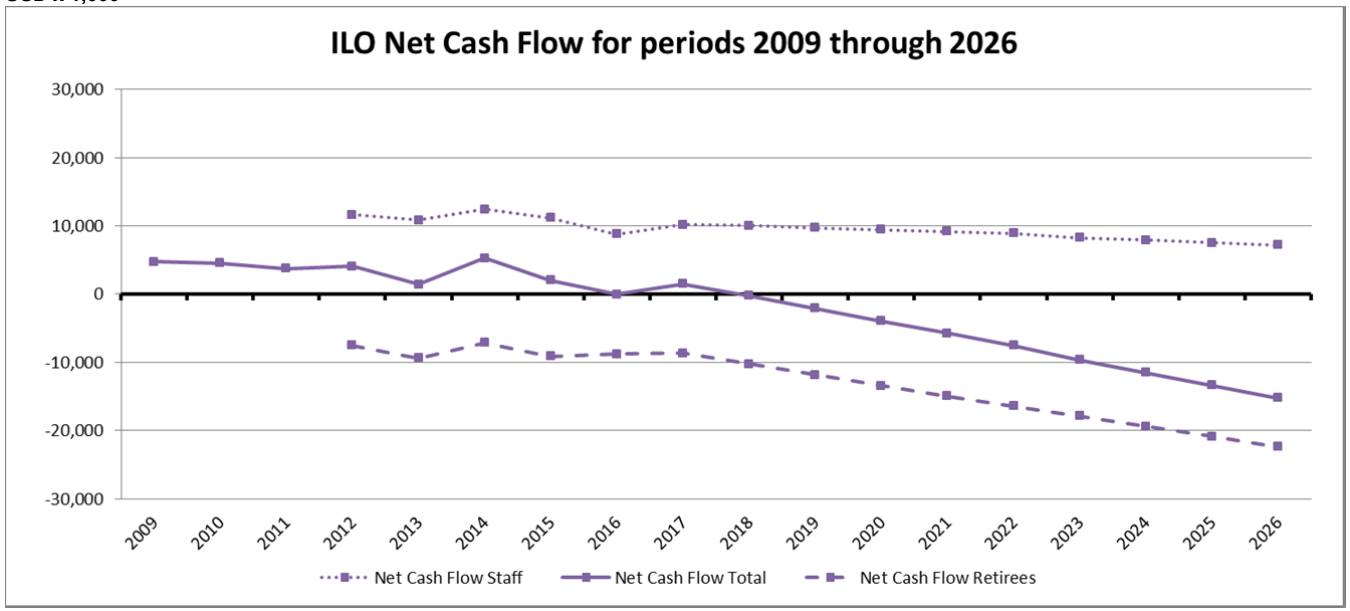


6.1.3. Net cash flow

The graph below shows the net cash flow (active staff, retirees and total), which is the difference between the contributions and the claims, for the period from 2009 to 2015 (history) and from 2016 to 2026 (projection).

This highlights that the contributions for the retirees are not high enough to cover the claims for the retirees, i.e. that there is a significant solidarity between active staff and retired members.

USD x 1,000



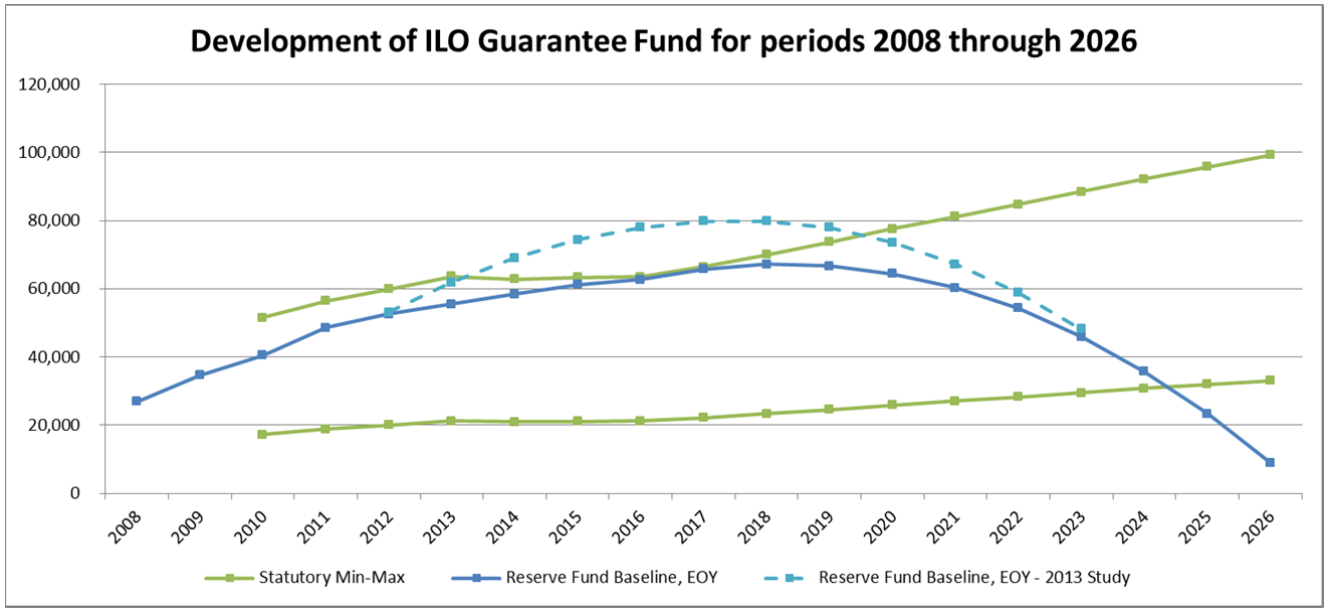
6.1.4. Projection of Guarantee Fund

The graph below shows the projected development of the Guarantee Fund on the basis that the assumptions in the projection are fully realized in the future. While the Guarantee Fund is assumed initially get close to the upper limit of the corridor, it is projected to reduce below the lower limit around 2024 and then deteriorate quickly from there.

The Guarantee Fund base-line projection from the most recent study is also shown as a light blue dashed line. The actual development of the Guarantee Fund since the previous study has lagged behind the due to the appreciation of the USD with respect to EUR and CHF.

Statutory minimum and maximum thresholds pictured below are based on baseline expected claims for the current projection study.

USD x 1,000



6.2. Scenario 1—Remove 2017 contribution rate increase

6.2.1. Description of scenario

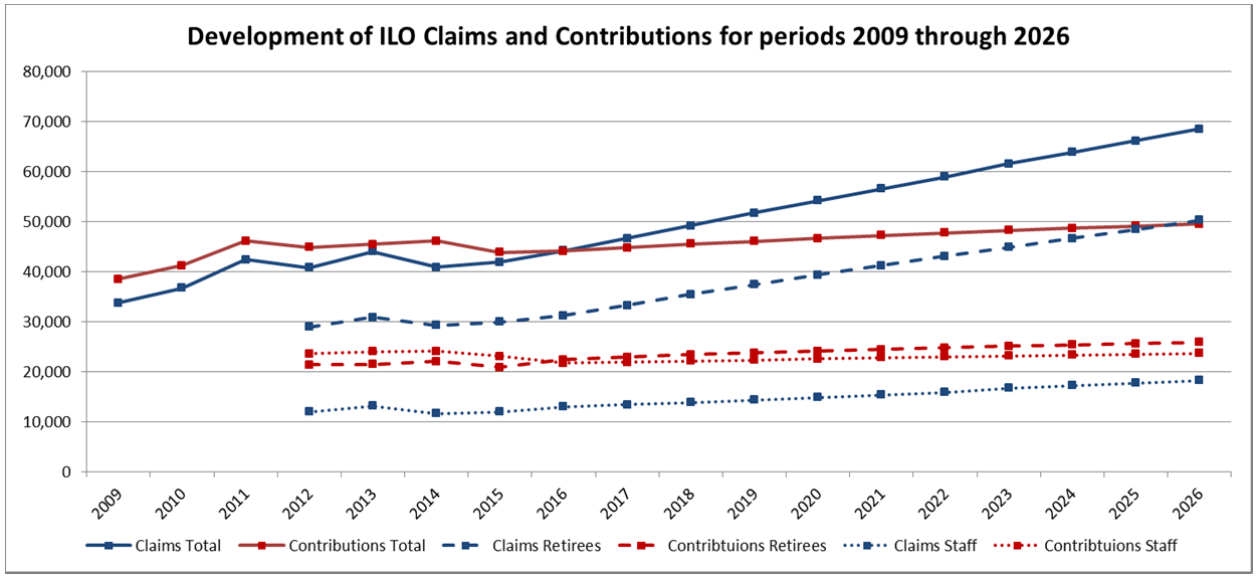
This scenario uses the same assumptions as the base-line scenario. The only difference from the base-line scenario is the level of contributions: under this scenario, we have removed the increase in level of contributions as of January 1, 2017, i.e. sum of staff and ILO contributions for active staff members remains at the 6.60% rate effective during 2016 for the entire projection period.

6.2.2. Contributions and expenditure

The graph below shows the projection of claims and contributions, split between staff (dotted lines) and retirees (dashed lines) as well as the total amounts (solid lines). The claims for the retirees are noticeably assumed to increase rapidly, mainly because of the ageing of the inactive population combined with the rapid progression of claims cost as the age increases.

There is no longer a sharp increase in contributions in 2017. The total contribution amount is about USD 4 million lower than in the base-line scenario by the end of the projection period.

USD x 1,000

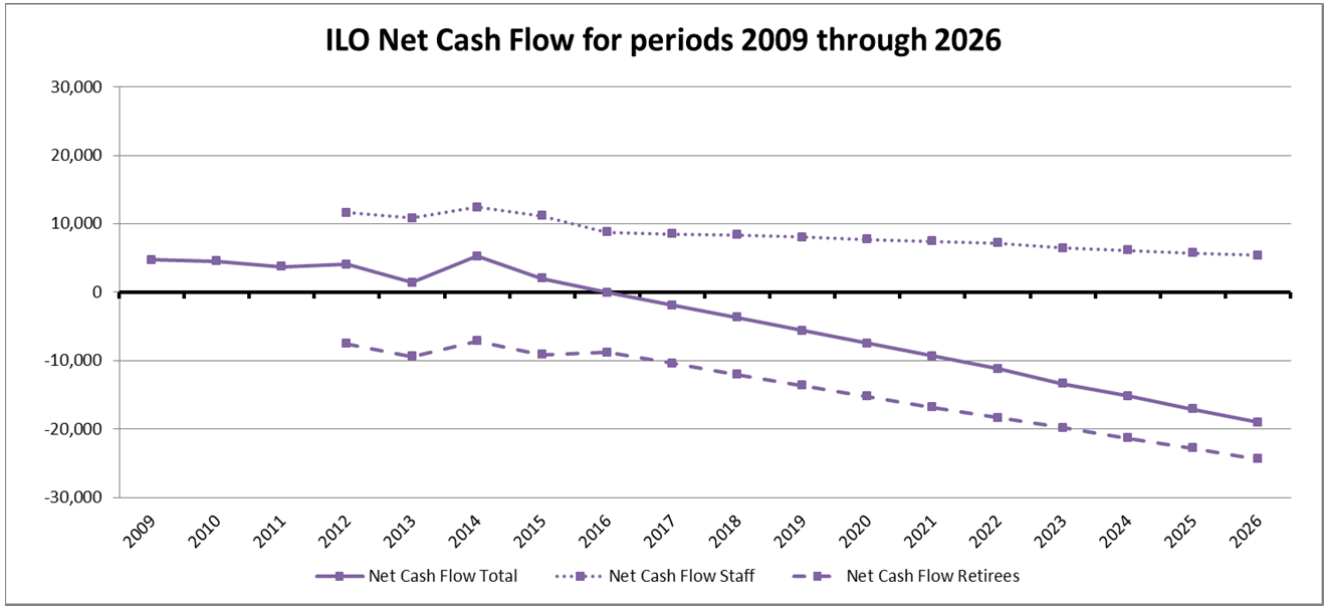


6.2.3. Net cash flow

The graph below shows the net cash flow (active staff, retirees and total), which is the difference between the contributions and the claims, for the period from 2009 to 2015 (history) and from 2016 to 2026 (projection).

While the base-line scenario showed approximately zero net cash flows in 2017, the impact of removing the contribution rate increase causes the net cash flow to become steadily more negative throughout the projection period.

USD x 1,000



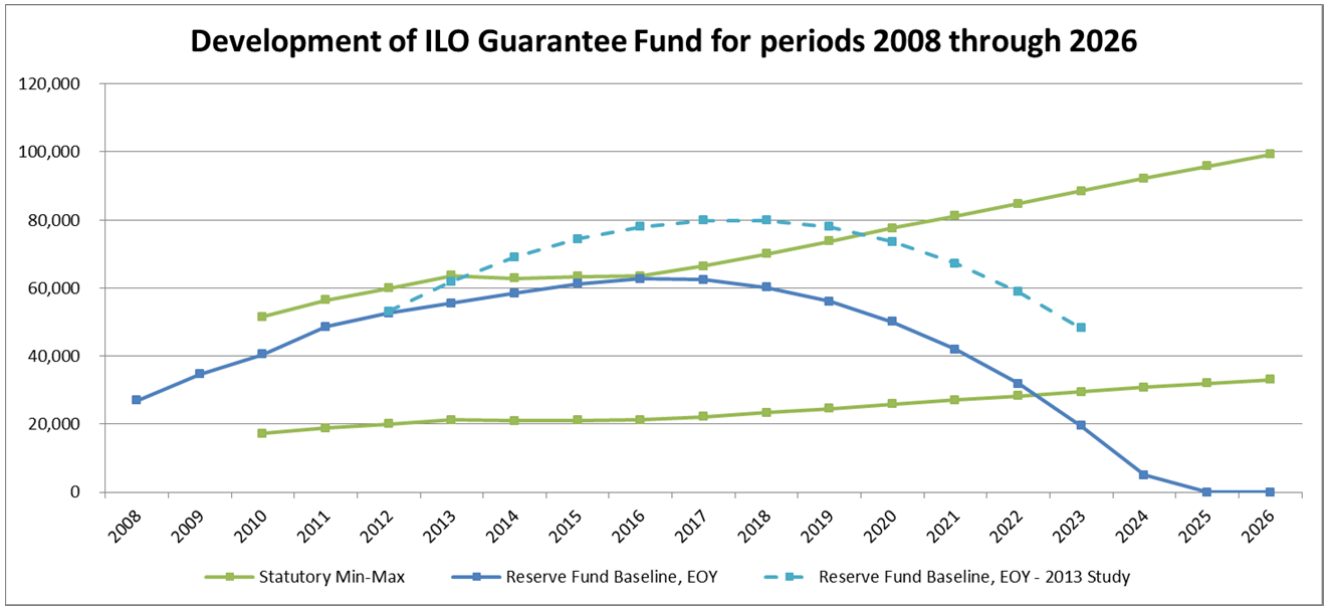
6.2.4. Projection of Guarantee Fund

The graph below shows the projected development of the Guarantee Fund on the basis that the assumptions in the projection are fully realized in the future. While the Guarantee Fund is assumed initially get close to the upper limit of the corridor, it is projected to reduce below the lower limit around 2024 and then deteriorate quickly from there. The lower limit for the Guarantee Fund is set at zero.

The removal of the contribution rate increase causes the projected Guarantee Fund assets to be completed depleted by 2025.

Statutory minimum and maximum thresholds pictured below are based on baseline expected claims for the current projection study.

USD x 1,000



6.3. Scenario 2—Medical increase variations

6.3.1. Description of scenario

The only difference between this scenario and the base-line scenario is in the assumed medical inflation rates that are adjusted for “high” and “low” scenarios.

The “high” scenario assumes the medical inflation rate 1% higher than the base-line scenario which represents an initial medical inflation rate 3.0% higher than general inflation (i.e., 4.5%) which grades down to an ultimate increase rate 2.0% higher than general inflation (i.e., 3.5%) by 2023.

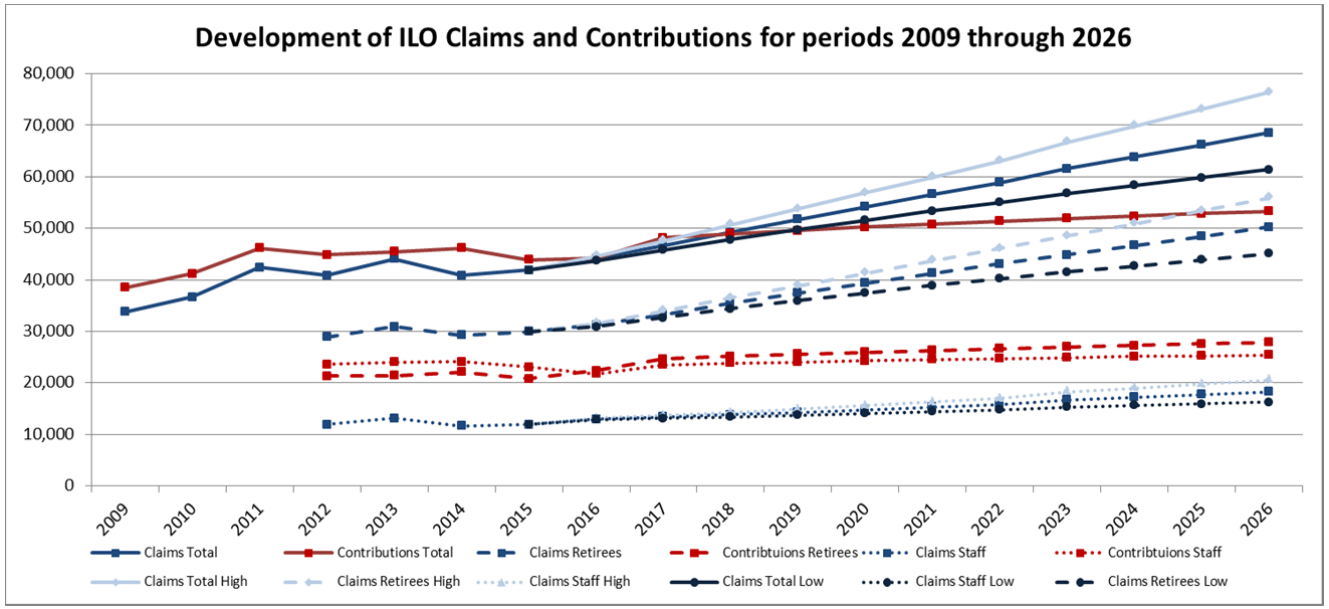
The “low” scenario assumes the medical inflation rate 1% lower than the base-line scenario which represents an initial medical inflation rate 1.0% higher than general inflation (i.e., 2.5%) which grades down to an ultimate increase rate equal to general inflation (i.e., 1.5%) by 2023.

6.3.2. Contributions and expenditure

The graph below shows the projection of claims and contributions, split between staff (dotted lines) and retirees (dashed lines) as well as the total amounts (solid lines). The claims for the retirees are noticeably assumed to increase rapidly, mainly because of the ageing of the inactive population combined with the rapid progression of claims cost as the age increases.

The variance in medical inflation rate significantly impacts the future claims cost. The difference in total claims between the “high” and “low” scenarios at the end of the projection period is about USD 15 million.

USD x 1,000

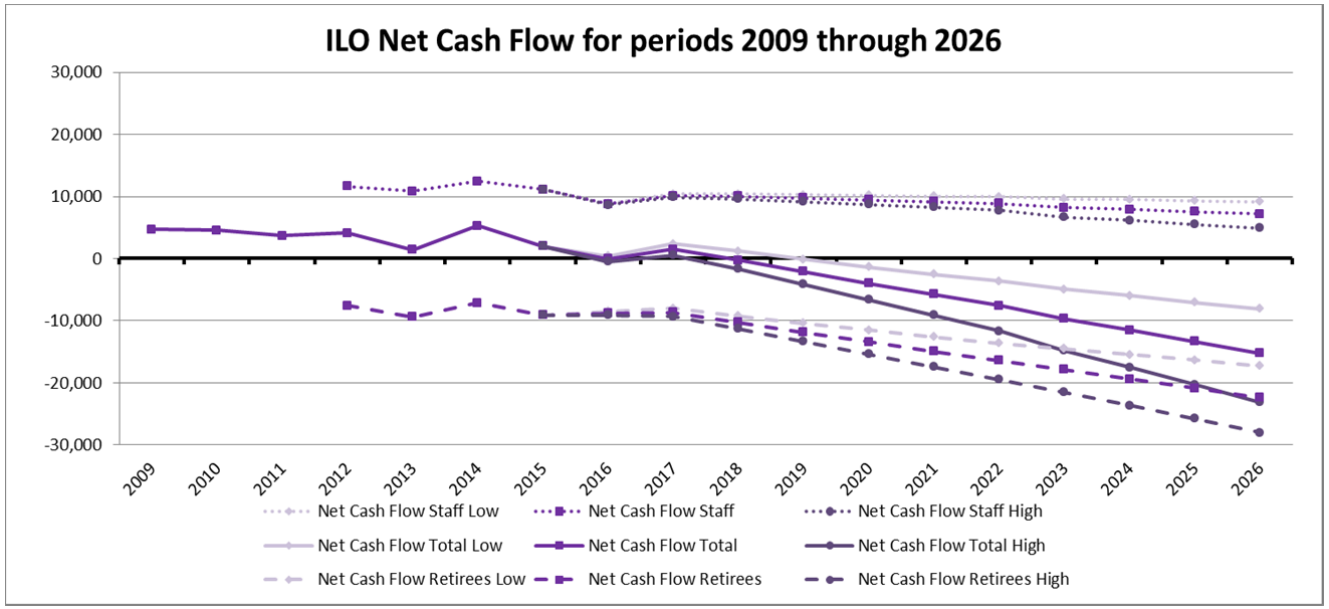


6.3.3. Net cash flow

The graph below shows the net cash flow (active staff, retirees and total), which is the difference between the contributions and the claims, for the period from 2009 to 2015 (history) and from 2016 to 2026 (projection).

The net cash flow still shows a downward trend even under the “low” scenario, however the annual cash flows deficit is projected to be much less severe than in the base-line scenario. The opposite is true under the “high” scenario where the annual cash flows deficit is projected to be greater than USD 20 million by 2025.

USD x 1,000



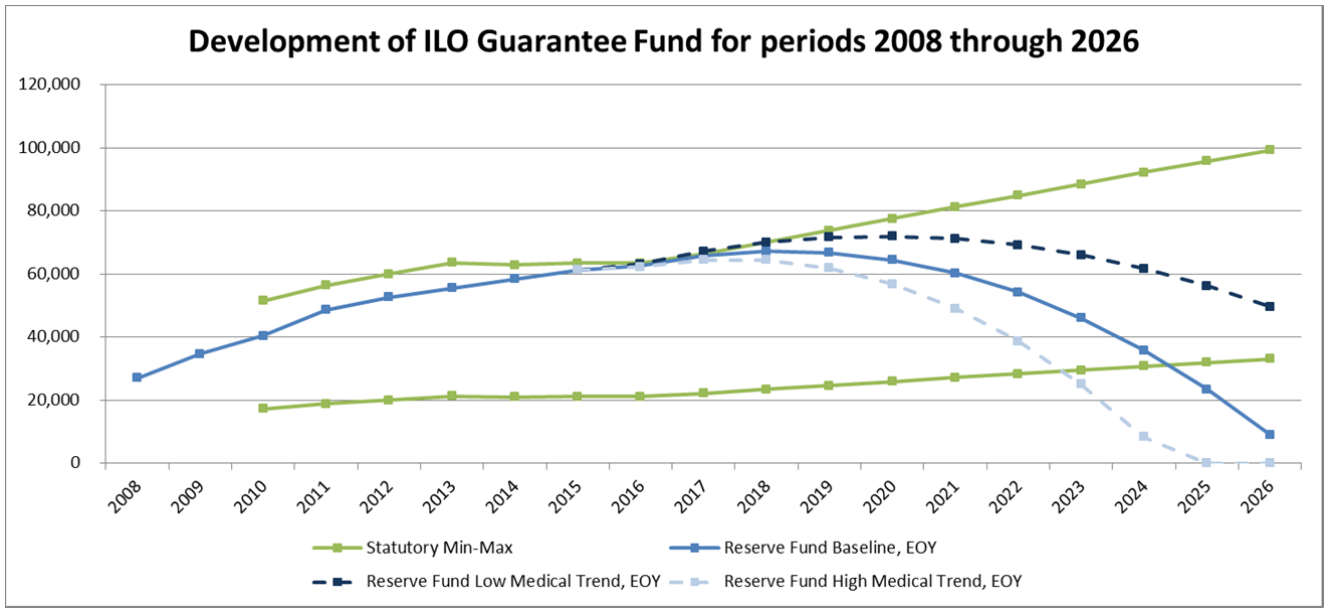
6.3.4. Projection of Guarantee Fund

The graph below shows the projected development of the Guarantee Fund on the basis that the assumptions in the projection are fully realized in the future. While the Guarantee Fund is assumed initially get close to the upper limit of the corridor, it is projected to reduce below the lower limit around 2024 and then deteriorate quickly from there. The lower limit for the Guarantee Fund is set at zero.

Under the “low” scenario, the Guarantee Fund remains above the minimum threshold. However, there is still a downward trend and the Guarantee Fund would likely drop below the minimum threshold a few years after the end of the projection period. Under the “high” scenario, the assets are projected to be depleted by 2025.

Statutory minimum and maximum thresholds pictured above are based on baseline expected claims. The thresholds would be about US$ 5,000 – US$10,000 higher or lower at the end of the projection period based on the higher or lower medical trend scenarios.

USD x 1,000



6.4. Scenario 3—Asset return variations

6.4.1. Description of scenario

The only difference between this scenario and the base-line scenario is in the expected asset returns that are adjusted for “high” and “low” scenarios.

The “high” scenario assumes a rate of asset return 1% higher than the base-line scenario which represents a return of 1.5% higher than general inflation (i.e., 3.0%).

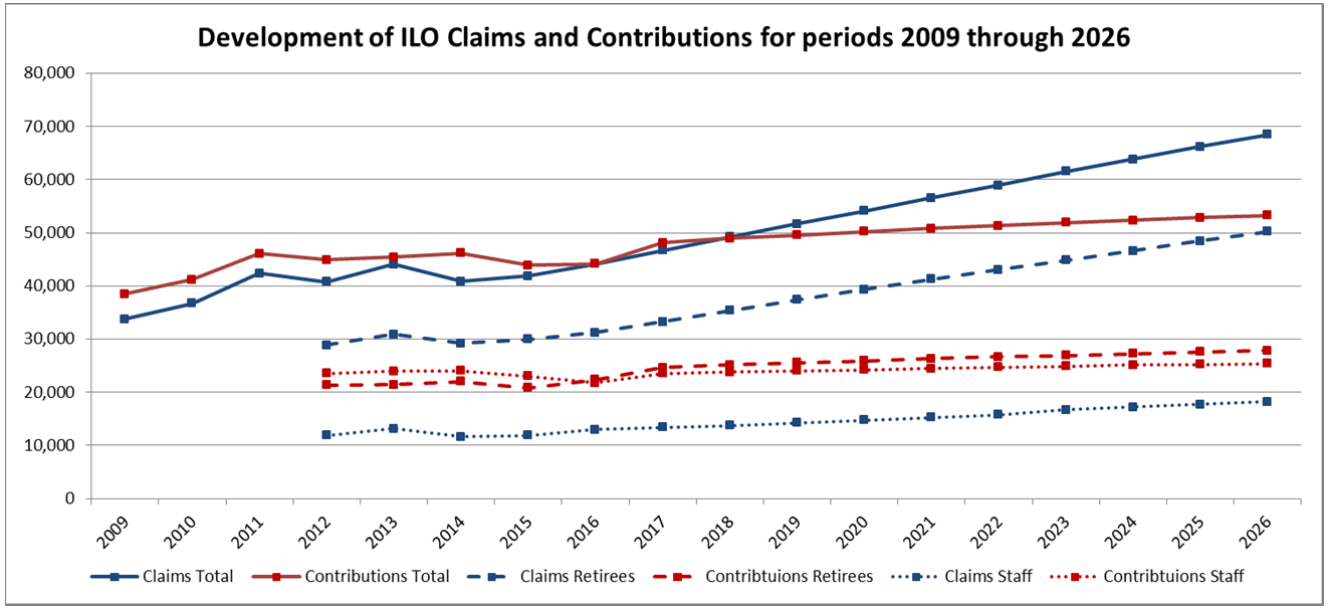
The “low” scenario assumes a rate of asset return 1% higher than the base-line scenario which represents a return of 0.5% lower than general inflation (i.e., 1.0%).

6.4.2. Contributions and expenditures

The graph below shows the projection of claims and contributions, split between staff (dotted lines) and retirees (dashed lines) as well as the total amounts (solid lines). The claims for the retirees are noticeably assumed to increase rapidly, mainly because of the ageing of the inactive population combined with the rapid progression of claims cost as the age increases.

This result is unchanged from the baseline scenario.

USD x 1,000

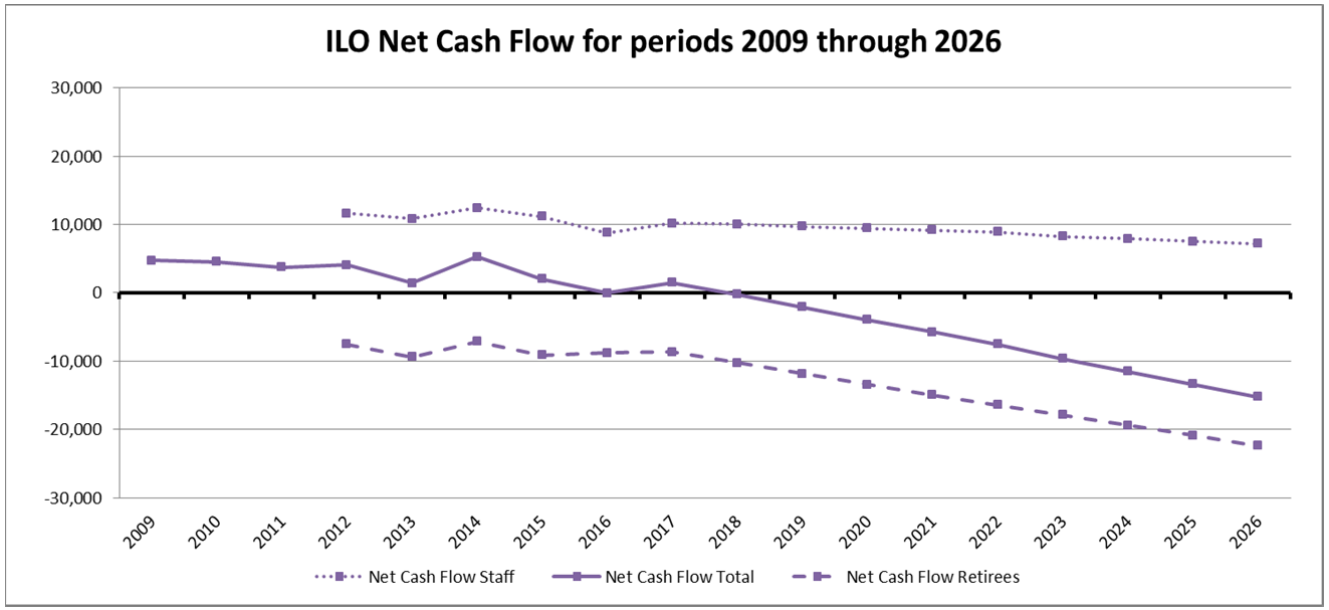


6.4.3. Net cash flow

The graph below shows the net cash flow (active staff, retirees and total), which is the difference between the contributions and the claims, for the period from 2009 to 2015 (history) and from 2016 to 2026 (projection).

This result is unchanged from the baseline scenario.

USD x 1,000



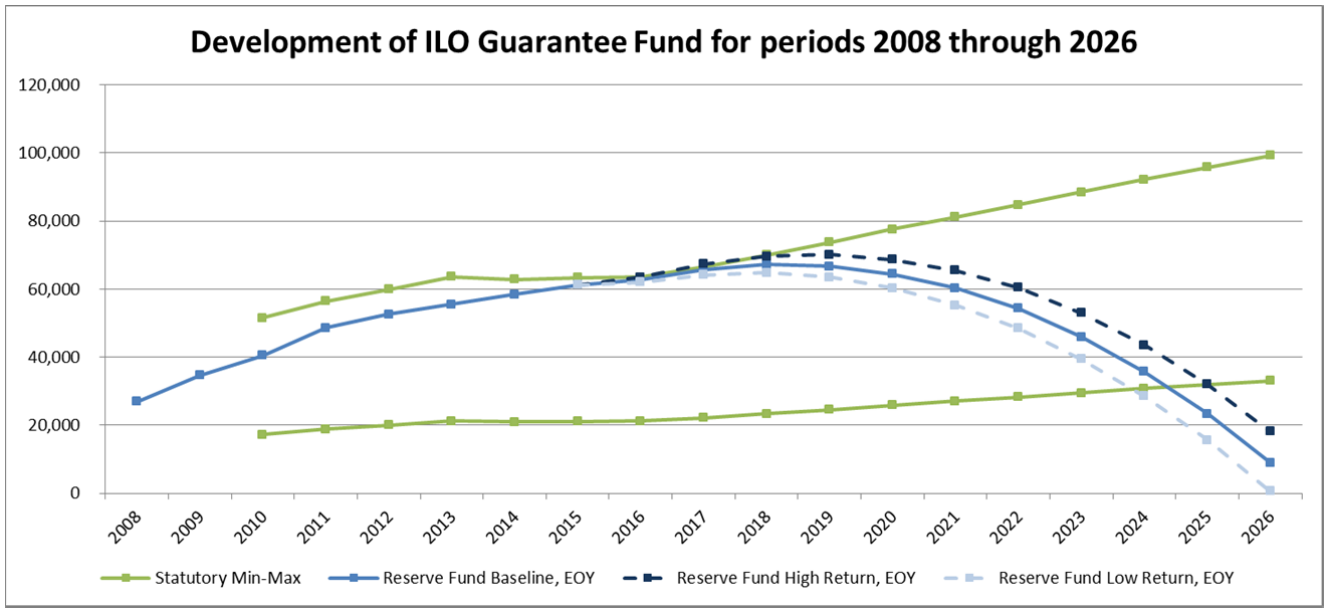
6.4.4. Projection of Guarantee Fund

The graph below shows the projected development of the Guarantee Fund on the basis that the assumptions in the projection are fully realized in the future. While the Guarantee Fund is assumed initially get close to the upper limit of the corridor, it is projected to reduce below the lower limit around 2024 and then deteriorate quickly from there.

The range of Guarantee Fund assets for +/- 1% asset return are not as great as observed under the high/low medical inflation scenario. Due to the funding policy of the SHIF, the assets are relatively small compared to the annual cash flows, so there is not a stable pool of assets enough to capture and retain excess positive or negative returns over time. The Guarantee Fund is generally more significantly impacted by fluctuation in cash flows and exchange rates than by asset returns.

Statutory minimum and maximum thresholds pictured below are based on baseline expected claims for the current projection study.

USD x 1,000



6.5. Scenario 4—Reduction in population growth

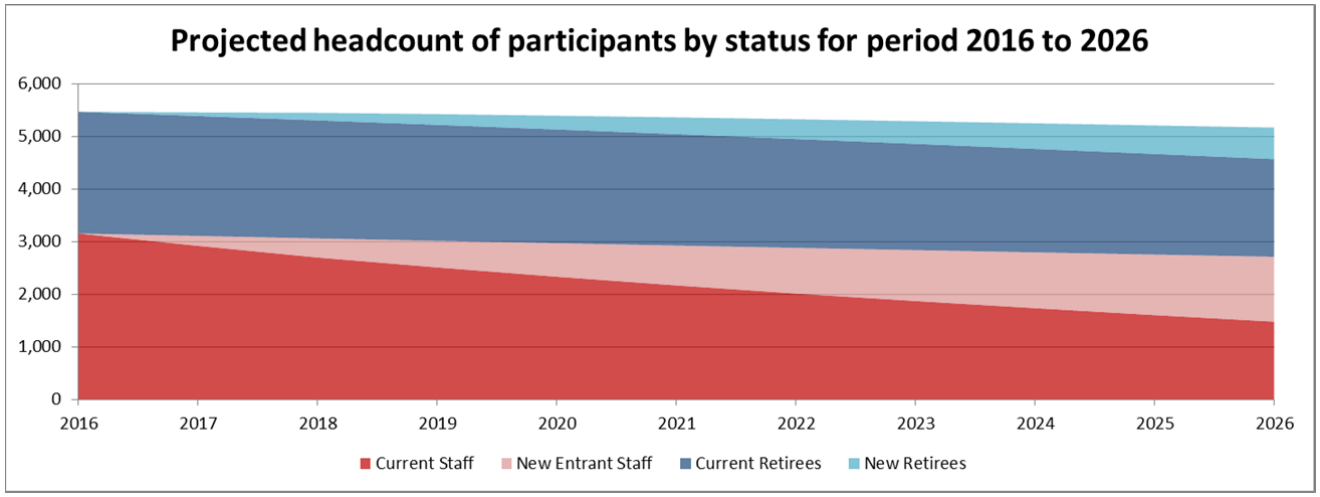
6.5.1. Description of scenario

The only difference between this scenario and the base-line scenario is in the projected number of active staff members over the next ten years. In this scenario the active staff member population is projected to decrease by 1.5% per year (15% over the next ten years). Active staff members are assumed to decrements at the same rates, and fewer new entrants are hired to replace the leaving staff members.

6.5.2. Projected headcount

The graph below shows the breakdown of the headcount in our 10-year projection between staff members (current and future active staff), and retirees (current and new retirees).

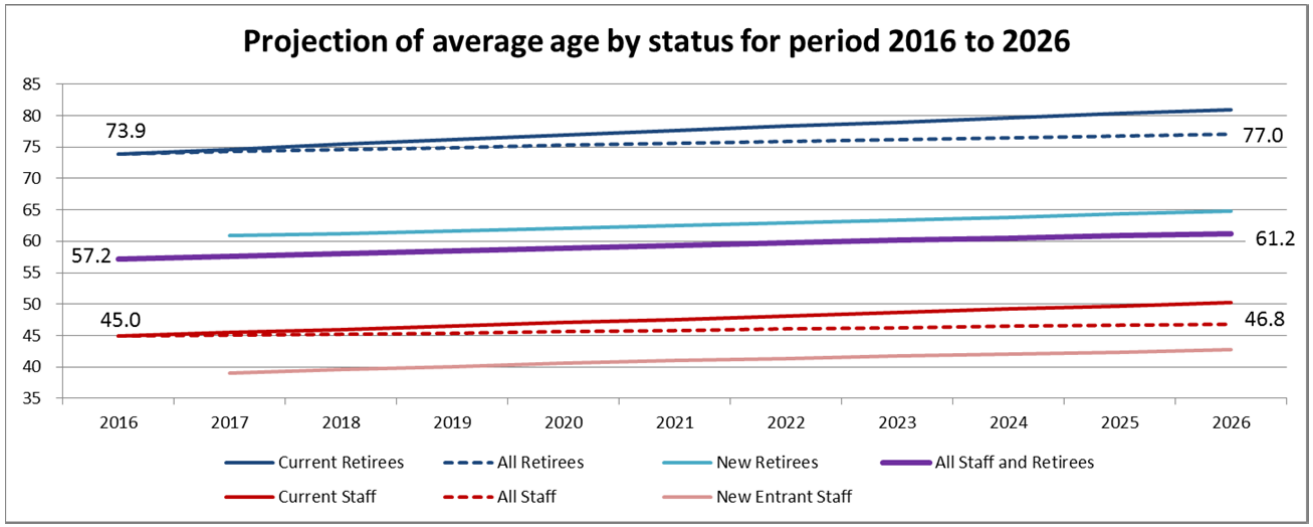
The total population and number of active staff members are projected to slowly trend downwards over the next ten years. At the end of the projection period, the total SHIF population is projected to be 5,174 (compared to 5,632 under the base-line scenario), and the number active staff members are projected to be 2,716 (compared to 3,159 under the base-line scenario).



6.5.3. Projected average age

The graph below shows the projection of the average age, separately for staff members and retirees, and the average ages notated in the chart show the increase in average age for the full group of staff members and retirees/beneficiaries each year (purple and dotted red/blue lines).

The demographic projection with fewer new entrants shows a greater increase in the average age of all of the member categories than under the base-line scenario since there are projected to be fewer younger new active staff members entering into the population.



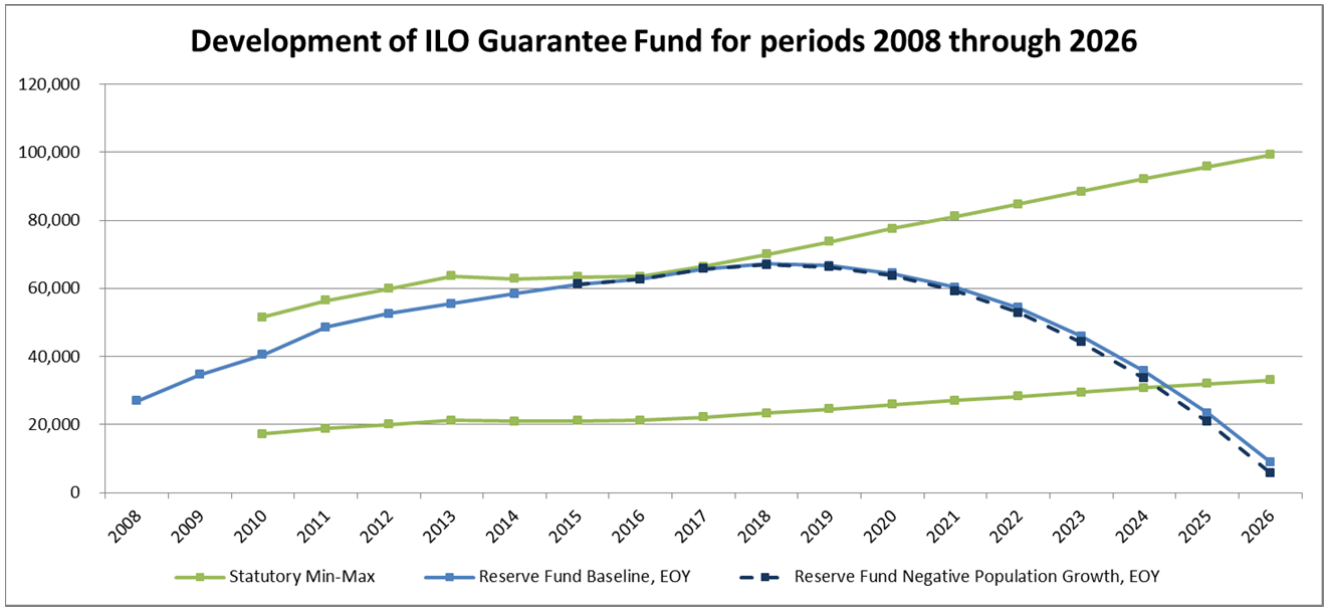
6.5.4. Projection of Guarantee Fund

The graph below shows the projected development of the Guarantee Fund on the basis that the assumptions in the projection are fully realized in the future. While the Guarantee Fund is assumed initially get close to the upper limit of the corridor, it is projected to reduce below the lower limit around 2024 and then deteriorate quickly from there.

The new hires are expected to have higher contributions than medical claims over the next ten years and are a net benefit to the Guarantee Fund. Even though the total active staff population under this scenario is projected to be 15% lower after ten years than under the base-line scenario, on average, these employees are younger (i.e., lower medical claims) and have a lower salary (i.e., lower SHIF contributions) than the existing staff members, so the impact of hiring fewer new staff members during the projection period does not show a very significant impact on the Guarantee Fund.

Statutory minimum and maximum thresholds pictured above are based on baseline expected claims. The thresholds would be about US$ 1,000 – US$ 3,000 lower at the end of the projection period based on the headcount reduction scenario.

USD x 1,000



7. Appendices

7.1. Appendix 1—Development of claims and contributions

History of contributions and claims reimbursements

All amounts are in USD x 1,000	2009	2010	2011	2012	2013	2014	2015
Contributions	38,485	41,207	46,118	44,881	45,429	46,151	43,877
Claims reimbursements	33,748	36,684	42,408	40,794	44,037	40,861	41,873
Ratio reimbursements / contributions	88%	89%	92%	91%	97%	89%	95%

7.2. Appendix 2—Development of Guarantee Fund

History of Guarantee Fund

In US$ x 1,000 at year-end	2008	2009	2010	2011	2012	2013	2014	2015
SHIF Guarantee Fund	26,991	34,621	40,438	48,541	52,621	55,454	58,401	61,231
Statutory minimum			17,169	18,807	19,981	21,207	20,949	21,129
Statutory maximum			51,506	56,420	59,943	63,620	62,846	63,386

7.2.1. Baseline Scenario

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
A - Gross assets as of 01.01.	77,390	78,199	82,093	84,316	84,678	83,178	79,793	74,661	67,132	57,639	46,094
B - Claims incurred but not received	(16,159)	(15,469)	(16,311)	(17,139)	(17,955)	(18,754)	(19,527)	(20,414)	(21,171)	(21,940)	(22,713)
C - Net assets as of 01.01.	61,231	62,730	65,782	67,177	66,723	64,424	60,266	54,247	45,960	35,700	23,381
D - Contributions	44,129	48,130	48,951	49,574	50,200	50,799	51,357	51,887	52,366	52,833	53,279
E - Investment income	1,547	1,578	1,639	1,665	1,654	1,605	1,520	1,396	1,227	1,019	769
F - Claims reimbursements	(44,177)	(46,656)	(49,195)	(51,693)	(54,153)	(56,562)	(58,895)	(61,570)	(63,853)	(66,171)	(68,503)
G - Net assets as of 31.12.	62,730	65,782	67,177	66,723	64,424	60,266	54,247	45,960	35,700	23,381	8,926
H - Statutory minimum reserve as of 31.12.	21,152	22,118	23,338	24,591	25,840	27,068	28,268	29,505	30,720	31,932	33,088
I - Statutory maximum reserve as of 31.12.	63,456	66,353	70,014	73,772	77,520	81,204	84,805	88,514	92,159	95,797	99,264
J - Surplus / (deficit) outside corridor 31.12.	0	0	0	0	0	0	0	0	0	(8,552)	(24,162)

7.2.2. Scenario 1 – Remove 2017 contribution rate increase

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
A - Gross assets as of 01.01.	77,390	78,199	78,669	77,343	74,038	68,754	61,468	52,316	40,648	26,902	10,984
B - Claims incurred but not received	(16,159)	(15,469)	(16,311)	(17,139)	(17,955)	(18,754)	(19,527)	(20,414)	(21,171)	(21,940)	(22,713)
C - Net assets as of 01.01.	61,231	62,730	62,359	60,203	56,083	50,000	41,940	31,902	19,477	4,963	(11,729)
D - Contributions	44,129	44,740	45,503	46,083	46,665	47,222	47,740	48,233	48,678	49,113	49,527
E - Investment income	1,547	1,544	1,536	1,490	1,405	1,281	1,117	912	661	367	29
F - Claims reimbursements	(44,177)	(46,656)	(49,195)	(51,693)	(54,153)	(56,562)	(58,895)	(61,570)	(63,853)	(66,171)	(68,503)
G - Net assets as of 31.12.	62,730	62,359	60,203	56,083	50,000	41,940	31,902	19,477	4,963	(11,729)	(30,676)
H - Statutory minimum reserve as of 31.12.	21,152	22,118	23,338	24,591	25,840	27,068	28,268	29,505	30,720	31,932	33,088
I - Statutory maximum reserve as of 31.12.	63,456	66,353	70,014	73,772	77,520	81,204	84,805	88,514	92,159	95,797	99,264
J - Surplus / (deficit) outside corridor 31.12.	0	0	0	0	0	0	0	(10,027)	(25,757)	(43,661)	(63,764)

7.2.3. Scenario 2 – Medical increase variations

7.2.3.1. Projection of Guarantee Fund – High medical inflation (initial: 4.5% / ultimate:3.5%)

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
A - Gross assets as of 01.01.	77,390	78,069	81,222	82,168	80,647	76,595	69,922	60,767	48,071	32,455	13,752
B - Claims incurred but not received	(16,159)	(15,770)	(16,789)	(17,813)	(18,842)	(19,871)	(20,893)	(22,113)	(23,156)	(24,231)	(25,329)
C - Net assets as of 01.01.	61,231	62,299	64,434	64,355	61,806	56,724	49,030	38,654	24,914	8,225	(11,577)
D - Contributions	44,129	48,130	48,951	49,574	50,200	50,799	51,357	51,887	52,366	52,833	53,279
E - Investment income	1,543	1,567	1,607	1,601	1,546	1,440	1,281	1,067	786	446	43
F - Claims reimbursements	(44,604)	(47,562)	(50,636)	(53,724)	(56,828)	(59,933)	(63,014)	(66,694)	(69,841)	(73,081)	(76,394)
G - Net assets as of 31.12.	62,299	64,434	64,355	61,806	56,724	49,030	38,654	24,914	8,225	(11,577)	(34,649)
H - Statutory minimum reserve as of 31.12.	21,223	22,340	23,800	25,321	26,865	28,414	29,962	31,607	33,258	34,936	36,553
I - Statutory maximum reserve as of 31.12.	63,669	67,020	71,401	75,962	80,594	85,243	89,887	94,820	99,774	104,808	109,658
J - Surplus / (deficit) outside corridor 31.12.	0	0	0	0	0	0	0	(6,693)	(25,034)	(46,513)	(71,201)

7.2.3.2. Projection of Guarantee Fund – Low medical inflation (initial: 2.5% / ultimate:1.5%)

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
A - Gross assets as of 01.01.	77,390	78,332	82,965	86,448	88,646	89,612	89,376	88,065	85,376	81,567	76,603
B - Claims incurred but not received	(16,159)	(15,171)	(15,842)	(16,485)	(17,102)	(17,689)	(18,239)	(18,831)	(19,339)	(19,846)	(20,346)
C - Net assets as of 01.01.	61,231	63,161	67,123	69,963	71,544	71,923	71,137	69,234	66,037	61,720	56,257
D - Contributions	44,129	48,130	48,951	49,574	50,200	50,799	51,357	51,887	52,366	52,833	53,279
E - Investment income	1,551	1,590	1,670	1,727	1,759	1,766	1,750	1,712	1,647	1,561	1,451
F - Claims reimbursements	(43,750)	(45,758)	(47,780)	(49,720)	(51,580)	(53,351)	(55,010)	(56,796)	(58,329)	(59,858)	(61,363)
G - Net assets as of 31.12.	63,161	67,123	69,963	71,544	71,923	71,137	69,234	66,037	61,720	56,257	49,624
H - Statutory minimum reserve as of 31.12.	21,081	21,897	22,881	23,876	24,847	25,775	26,657	27,526	28,356	29,164	29,925
I - Statutory maximum reserve as of 31.12.	63,242	65,691	68,644	71,629	74,540	77,325	79,970	82,579	85,068	87,491	89,775
J - Surplus / (deficit) outside corridor 31.12.	0	1,432	1,319	0	0	0	0	0	0	0	0

7.2.4. Scenario 3 – Asset return variations

7.2.4.1. Projection of Guarantee Fund – 3% Return

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
A - Gross assets as of 01.01.	77,390	78,972	83,679	86,769	88,037	87,464	85,011	80,796	74,149	65,481	54,681
B - Claims incurred but not received	(16,159)	(15,469)	(16,311)	(17,139)	(17,955)	(18,754)	(19,527)	(20,414)	(21,171)	(21,940)	(22,713)
C - Net assets as of 01.01.	61,231	63,503	67,368	69,630	70,082	68,710	65,484	60,382	52,977	43,542	31,968
D - Contributions	44,129	48,130	48,951	49,574	50,200	50,799	51,357	51,887	52,366	52,833	53,279
E - Investment income	2,320	2,391	2,506	2,571	2,581	2,537	2,437	2,278	2,052	1,764	1,412
F - Claims reimbursements	(44,177)	(46,656)	(49,195)	(51,693)	(54,153)	(56,562)	(58,895)	(61,570)	(63,853)	(66,171)	(68,503)
G - Net assets as of 31.12.	63,503	67,368	69,630	70,082	68,710	65,484	60,382	52,977	43,542	31,968	18,156
H - Statutory minimum reserve as of 31.12.	21,152	22,118	23,338	24,591	25,840	27,068	28,268	29,505	30,720	31,932	33,088
I - Statutory maximum reserve as of 31.12.	63,456	66,353	70,014	73,772	77,520	81,204	84,805	88,514	92,159	95,797	99,264
J - Surplus / (deficit) outside corridor 31.12.	47	1,015	0	0	0	0	0	0	0	0	(14,932)

7.2.4.2. Projection of Guarantee Fund – 1% Return

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
A - Gross assets as of 01.01.	77,390	77,425	80,522	81,909	81,414	79,054	74,825	68,883	60,598	50,426	38,299
B - Claims incurred but not received	(16,159)	(15,469)	(16,311)	(17,139)	(17,955)	(18,754)	(19,527)	(20,414)	(21,171)	(21,940)	(22,713)
C - Net assets as of 01.01.	61,231	61,956	64,211	64,770	63,459	60,300	55,298	48,469	39,426	28,487	15,586
D - Contributions	44,129	48,130	48,951	49,574	50,200	50,799	51,357	51,887	52,366	52,833	53,279
E - Investment income	773	781	803	808	794	761	710	640	548	437	306
F - Claims reimbursements	(44,177)	(46,656)	(49,195)	(51,693)	(54,153)	(56,562)	(58,895)	(61,570)	(63,853)	(66,171)	(68,503)
G - Net assets as of 31.12.	61,956	64,211	64,770	63,459	60,300	55,298	48,469	39,426	28,487	15,586	668
H - Statutory minimum reserve as of 31.12.	21,152	22,118	23,338	24,591	25,840	27,068	28,268	29,505	30,720	31,932	33,088
I - Statutory maximum reserve as of 31.12.	63,456	66,353	70,014	73,772	77,520	81,204	84,805	88,514	92,159	95,797	99,264
J - Surplus / (deficit) outside corridor 31.12.	0	0	0	0	0	0	0	0	(2,233)	(16,347)	(32,420)

7.2.5. Projection of Guarantee Fund – Reduction in population growth

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
A - Gross assets as of 01.01.	77,390	78,148	81,917	83,942	84,036	82,205	78,429	72,834	64,830	54,821	42,720
B - Claims incurred but not received	(16,159)	(15,418)	(16,204)	(16,971)	(17,720)	(18,446)	(19,143)	(19,936)	(20,602)	(21,273)	(21,942)
C - Net assets as of 01.01.	61,231	62,730	65,713	66,971	66,317	63,758	59,286	52,899	44,229	33,548	20,778
D - Contributions	44,129	47,909	48,496	48,876	49,247	49,580	49,860	50,100	50,277	50,431	50,550
E - Investment income	1,547	1,577	1,634	1,655	1,638	1,583	1,489	1,356	1,178	959	698
F - Claims reimbursements	(44,177)	(46,503)	(48,872)	(51,185)	(53,444)	(55,636)	(57,736)	(60,127)	(62,136)	(64,160)	(66,178)
G - Net assets as of 31.12.	62,730	65,713	66,971	66,317	63,758	59,286	52,899	44,229	33,548	20,778	5,849
H - Statutory minimum reserve as of 31.12.	21,152	22,092	23,259	24,427	25,584	26,711	27,803	28,916	30,000	31,070	32,079
I - Statutory maximum reserve as of 31.12.	63,456	66,276	69,776	73,280	76,751	80,132	83,408	86,749	89,999	93,211	96,237
J - Surplus / (deficit) outside corridor 31.12.	0	0	0	0	0	0	0	0	0	(10,292)	(26,230)

7.3. Appendix 3— Demographic projections

Demographic projection at the beginning of each year: 0% Population Growth per year

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Active staff members											
Headcount											
- Existing staff members	3,159	2,924	2,702	2,513	2,336	2,171	2,016	1,873	1,737	1,605	1,480
- New entrants during projection period		235	457	646	823	988	1,143	1,286	1,422	1,554	1,679
- Total	3,159	3,159	3,159	3,159	3,159	3,159	3,159	3,159	3,159	3,159	3,159
Average Age											
- Existing staff members	45.0	45.4	45.9	46.5	47.0	47.6	48.1	48.7	49.2	49.7	50.2
- New entrants during projection period		39.0	39.5	40.0	40.5	40.9	41.3	41.6	42.0	42.3	42.6
- Total	45.0	45.0	45.0	45.2	45.3	45.5	45.7	45.8	46.0	46.1	46.2
Retirees, disabled and surviving spouses											
Headcount											
- Existing retired members	2,317	2,283	2,247	2,208	2,165	2,121	2,073	2,022	1,970	1,915	1,859
- New retirees during projection period		69	144	204	262	321	379	437	495	554	615
- Total	2,317	2,352	2,391	2,411	2,428	2,442	2,452	2,460	2,464	2,469	2,473
Average Age											
- Existing retired members	73.9	74.6	75.4	76.1	76.9	77.6	78.3	79.0	79.6	80.3	80.9
- New retirees during projection period		60.9	61.2	61.6	62.0	62.4	62.8	63.3	63.7	64.2	64.7
- Total	73.9	74.2	74.6	74.9	75.3	75.6	75.9	76.2	76.4	76.7	76.9

Demographic projection at the beginning of each year: -1.5% Population Growth per year

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Active staff members											
Headcount											
- Existing staff members	3,159	2,924	2,702	2,513	2,336	2,171	2,016	1,873	1,737	1,605	1,480
- New entrants during projection period		187	363	506	638	759	869	969	1,062	1,152	1,236
- Total	3,159	3,112	3,065	3,019	2,974	2,929	2,885	2,842	2,799	2,757	2,716
Average Age											
- Existing staff members	45.0	45.4	45.9	46.5	47.0	47.6	48.1	48.7	49.2	49.7	50.2
- New entrants during projection period		39.0	39.5	40.1	40.5	41.0	41.4	41.7	42.0	42.4	42.7
- Total	45.0	45.1	45.2	45.4	45.6	45.9	46.1	46.3	46.5	46.7	46.8
Retirees, disabled and surviving spouses											
Headcount											
- Existing retired members	2,317	2,283	2,247	2,208	2,165	2,121	2,073	2,022	1,970	1,915	1,859
- New retirees during projection period		69	144	203	261	319	375	431	486	542	600
- Total	2,317	2,352	2,391	2,411	2,427	2,439	2,448	2,454	2,456	2,458	2,458
Average Age											
- Existing retired members	73.9	74.6	75.4	76.1	76.9	77.6	78.3	79.0	79.6	80.3	80.9
- New retirees during projection period		60.9	61.3	61.6	62.0	62.4	62.9	63.4	63.8	64.3	64.8
- Total	73.9	74.2	74.6	74.9	75.3	75.6	75.9	76.2	76.5	76.8	77.0

Decrements each year for current active staff members

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	10-year total
Total ILO Population												
- Remaining active staff members	3,159	2,924	2,702	2,513	2,336	2,171	2,016	1,873	1,737	1,605	1,480	
- New retirees during the year	70	76	59	58	55	53	49	47	49	49		567
- Leaving actives not eligible or not electing	165	146	130	119	110	101	94	88	83	77		1,113
1a. All Males Only												
- Remaining active staff members	1,453	1,321	1,202	1,104	1,016	932	855	783	713	646	583	
- New retirees during the year	39	40	28	25	25	23	21	23	22	22		268
- Leaving actives not eligible or not electing	93	80	69	63	59	54	51	48	44	41		602
1b. All Females Only												
- Remaining active staff members	1,706	1,603	1,500	1,409	1,321	1,238	1,160	1,089	1,025	959	897	
- New retirees during the year	31	36	31	32	31	31	28	24	27	27		298
- Leaving actives not eligible or not electing	72	66	60	56	51	47	43	40	38	36		511
2a. All General Staff Only												
- Remaining active staff members	1,973	1,845	1,719	1,611	1,506	1,407	1,314	1,227	1,146	1,065	988	
- New retirees during the year	32	40	29	33	31	31	29	27	29	29		310
- Leaving actives not eligible or not electing	96	86	78	73	68	62	58	54	51	48		674
2b. All Professional Staff Only												
- Remaining active staff members	1,186	1,079	984	902	830	763	702	646	592	540	491	
- New retirees during the year	38	36	30	25	25	22	21	20	20	20		256
- Leaving actives not eligible or not electing	69	60	52	46	42	39	36	34	32	29		438

7.4. Appendix 4— Claims cost—results of experience study

Comparison of medical claims assumptions by age

USD x 1	1. Old claims based on 2013 Study	2. Old claims w/ expected trend	3. New claims based on 2016 Study	Percentage increase 1. Old to 3. New	Percentage increase 2. Old with trend to 3.
Age					
30	2,108	2,362	1,697	-19%	-28%
35	2,995	3,355	2,382	-20%	-29%
40	3,922	4,394	3,106	-21%	-29%
45	4,880	5,467	3,856	-21%	-29%
50	5,796	6,493	4,572	-21%	-30%
55	6,796	7,613	5,575	-18%	-27%
60	7,996	8,957	6,877	-14%	-23%
65	9,345	10,469	8,305	-11%	-21%
70	10,950	12,266	10,023	-8%	-18%
75	12,837	14,380	12,146	-5%	-16%
80	15,126	16,944	15,264	1%	-10%
85	17,945	20,103	19,579	9%	-3%
90	20,999	23,524	24,272	16%	3%
95	24,133	27,034	29,123	21%	8%
100	27,318	30,602	34,021	25%	11%

7.5. Appendix 5— SHIF projection assumptions

The process for developing each assumption is described in section 3.3. The resulting age-related assumption tables used in the SHIF projections are detailed in this appendix.

7.5.1. Table 1 - Turnover rates

Age	Male	Female	Age	Male	Female	Age	Male	Female
20	6.63%	3.68%	**35**	5.30%	3.82%	**50**	3.64%	1.86%
21	7.21%	4.69%	**36**	5.08%	3.67%	**51**	3.87%	1.90%
22	7.80%	5.70%	**37**	4.86%	3.53%	**52**	4.10%	1.94%
23	8.38%	6.72%	**38**	4.64%	3.38%	**53**	4.32%	1.98%
24	8.97%	7.73%	**39**	4.42%	3.24%	**54**	4.55%	2.02%
25	9.55%	8.74%	**40**	4.20%	3.09%	**55**	4.78%	2.06%
26	8.98%	8.17%	**41**	4.16%	2.90%	**56**	6.58%	3.98%
27	8.41%	7.61%	**42**	4.12%	2.72%	**57**	8.38%	5.90%
28	7.83%	7.04%	**43**	4.07%	2.53%	**58**	10.19%	7.81%
29	7.26%	6.48%	**44**	4.03%	2.35%	**59**	11.99%	9.73%
30	6.69%	5.91%	**45**	3.99%	2.16%	**60**	13.79%	11.65%
31	6.41%	5.49%	**46**	3.92%	2.10%	**61**	21.03%	19.32%
32	6.13%	5.07%	**47**	3.85%	2.04%	**62**	28.27%	26.99%
33	5.86%	4.66%	**48**	3.78%	1.98%	**63**	35.52%	34.66%
34	5.58%	4.24%	**49**	3.71%	1.92%	**64**	42.76%	42.33%
						65	50.00%	50.00%

7.5.2. Table 2 - Disability rates

Age	Male	Female	Age	Male	Female	Age	Male	Female
20	0.0110%	0.0270%	**35**	0.0260%	0.0410%	**50**	0.1320%	0.1080%
21	0.0110%	0.0270%	**36**	0.0260%	0.0440%	**51**	0.1480%	0.1250%
22	0.0110%	0.0270%	**37**	0.0310%	0.0440%	**52**	0.1710%	0.1450%
23	0.0110%	0.0270%	**38**	0.0310%	0.0510%	**53**	0.1870%	0.1690%
24	0.0110%	0.0270%	**39**	0.0350%	0.0510%	**54**	0.1950%	0.1860%
25	0.0110%	0.0270%	**40**	0.0430%	0.0510%	**55**	0.2020%	0.2100%
26	0.0110%	0.0270%	**41**	0.0480%	0.0510%	**56**	0.2090%	0.2270%
27	0.0110%	0.0270%	**42**	0.0510%	0.0510%	**57**	0.2020%	0.2540%
28	0.0160%	0.0270%	**43**	0.0550%	0.0580%	**58**	0.1960%	0.2710%
29	0.0230%	0.0270%	**44**	0.0580%	0.0610%	**59**	0.1920%	0.2950%
30	0.0230%	0.0270%	**45**	0.0620%	0.0680%	**60**	0.1870%	0.3210%
31	0.0230%	0.0340%	**46**	0.0730%	0.0750%	**61**	0.1900%	0.3550%
32	0.0190%	0.0340%	**47**	0.0810%	0.0780%	**62**	0.1940%	0.3890%
33	0.0190%	0.0340%	**48**	0.0930%	0.0920%	**63**	0.2040%	0.4230%
34	0.0230%	0.0410%	**49**	0.1120%	0.0980%	**64**	0.2110%	0.4640%
						65+	0.0000%	0.0000%

7.5.3. Table 3 - Retirement rates

Age	Male	Female
55	5.00%	5.00%
56	4.00%	4.00%
57	4.00%	4.00%
58	5.00%	5.00%
59	5.00%	5.00%
60	8.00%	11.00%
61	8.00%	9.00%
62	75.00%	85.00%
63	45.00%	65.00%
64	45.00%	70.00%
65	50.00%	100.00%
66	50.00%	100.00%
67	50.00%	100.00%
68	50.00%	100.00%
69	50.00%	100.00%
70+	100.00%	100.00%

7.5.4. Table 4 - Mortality rates

Table 4A - Mortality table for Active Staff Members

Age	Male	Female	Age	Male	Female	Age	Male	Female	Age	Male	Female
20	0.0650%	0.0340%	**35**	0.1040%	0.0570%	**50**	0.2240%	0.1000%	**65**	0.4910%	0.3010%
21	0.0650%	0.0350%	**36**	0.1100%	0.0590%	**51**	0.2300%	0.1020%	**66**	0.5700%	0.3660%
22	0.0650%	0.0360%	**37**	0.1150%	0.0620%	**52**	0.2370%	0.1030%	**67**	0.6650%	0.4440%
23	0.0650%	0.0370%	**38**	0.1220%	0.0640%	**53**	0.2430%	0.1050%	**68**	0.7770%	0.5360%
24	0.0650%	0.0390%	**39**	0.1290%	0.0660%	**54**	0.2500%	0.1060%	**69**	0.9060%	0.6450%
25	0.0650%	0.0400%	**40**	0.1360%	0.0690%	**55**	0.2570%	0.1080%	**70+**	N/A	N/A
26	0.0680%	0.0410%	**41**	0.1440%	0.0720%	**56**	0.2590%	0.1070%			
27	0.0710%	0.0430%	**42**	0.1520%	0.0750%	**57**	0.2610%	0.1070%			
28	0.0740%	0.0450%	**43**	0.1610%	0.0780%	**58**	0.2630%	0.1060%			
29	0.0770%	0.0460%	**44**	0.1700%	0.0810%	**59**	0.2650%	0.1060%			
30	0.0800%	0.0480%	**45**	0.1790%	0.0850%	**60**	0.2660%	0.1050%			
31	0.0850%	0.0500%	**46**	0.1870%	0.0880%	**61**	0.2930%	0.1310%			
32	0.0890%	0.0510%	**47**	0.1960%	0.0910%	**62**	0.3270%	0.1620%			
33	0.0940%	0.0530%	**48**	0.2050%	0.0940%	**63**	0.3710%	0.2000%			
34	0.0980%	0.0550%	**49**	0.2140%	0.0970%	**64**	0.4250%	0.2460%			

Table 4B - Mortality table for Retirees and Surviving Spouses

Age	Male	Female	Age	Male	Female	Age	Male	Female	Age	Male	Female	Age	Male	Female	Age	Male	Female
20	0.0426%	0.0219%	**35**	0.0680%	0.0378%	**50**	0.1644%	0.0615%	**65**	0.3631%	0.2997%	**80**	2.9933%	2.1730%	**95**	23.4780%	15.0710%
21	0.0426%	0.0231%	**36**	0.0722%	0.0390%	**51**	0.1727%	0.0615%	**66**	0.4122%	0.3478%	**81**	3.4516%	2.4705%	**96**	24.4970%	16.3830%
22	0.0426%	0.0237%	**37**	0.0757%	0.0402%	**52**	0.1816%	0.0615%	**67**	0.4696%	0.4022%	**82**	3.9791%	2.8118%	**97**	25.5260%	17.8000%
23	0.0426%	0.0248%	**38**	0.0804%	0.0420%	**53**	0.1904%	0.0615%	**68**	0.5352%	0.4624%	**83**	4.5834%	3.2016%	**98**	26.5950%	19.3320%
24	0.0426%	0.0254%	**39**	0.0846%	0.0438%	**54**	0.2005%	0.0615%	**69**	0.6103%	0.5309%	**84**	5.2759%	3.6519%	**99**	27.7380%	20.9930%
25	0.0426%	0.0266%	**40**	0.0893%	0.0449%	**55**	0.2105%	0.0615%	**70**	0.6955%	0.6067%	**85**	6.0678%	4.1693%	**100**	28.9910%	22.7980%
26	0.0444%	0.0272%	**41**	0.0946%	0.0473%	**56**	0.2058%	0.0722%	**71**	0.8083%	0.6920%	**86**	6.9736%	4.7650%	**101**	30.3970%	24.7660%
27	0.0467%	0.0284%	**42**	0.0999%	0.0491%	**57**	0.2040%	0.0840%	**72**	0.9385%	0.7883%	**87**	8.0090%	5.4536%	**102**	32.0050%	26.9240%
28	0.0485%	0.0296%	**43**	0.1059%	0.0515%	**58**	0.2058%	0.0982%	**73**	1.0878%	0.8960%	**88**	9.1911%	6.2480%	**103**	33.8620%	29.3080%
29	0.0509%	0.0302%	**44**	0.1118%	0.0532%	**59**	0.2123%	0.1147%	**74**	1.2597%	1.0169%	**89**	10.5404%	7.1650%	**104**	36.0100%	31.9670%
30	0.0526%	0.0313%	**45**	0.1177%	0.0556%	**60**	0.2224%	0.1337%	**75**	1.4569%	1.1543%	**90**	12.0793%	8.2260%	**105+**	100.00%	100.00%
31	0.0556%	0.0325%	**46**	0.1260%	0.0568%	**61**	0.2389%	0.1583%	**76**	1.6841%	1.3096%	**91**	13.8089%	9.2710%			
32	0.0585%	0.0337%	**47**	0.1348%	0.0580%	**62**	0.2602%	0.1868%	**77**	1.9457%	1.4856%	**92**	15.7769%	10.4570%			
33	0.0615%	0.0349%	**48**	0.1437%	0.0591%	**63**	0.2880%	0.2195%	**78**	2.2471%	1.6855%	**93**	18.0190%	11.8040%			
34	0.0645%	0.0361%	**49**	0.1538%	0.0603%	**64**	0.3223%	0.2571%	**79**	2.5940%	1.9136%	**94**	20.5715%	13.3340%			

Table 4C - Mortality table for Disableds

Age	Male	Female	Age	Male	Female	Age	Male	Female	Age	Male	Female	Age	Male	Female	Age	Male	Female
20	0.0720%	0.0450%	**35**	0.1510%	0.0760%	**50**	0.3560%	0.1040%	**65**	1.1760%	0.8600%	**80**	7.4770%	4.5470%	**95**	28.9910%	22.7980%
21	0.0750%	0.0460%	**36**	0.1600%	0.0800%	**51**	0.3480%	0.1220%	**66**	1.3380%	0.9640%	**81**	8.4150%	5.1080%	**96**	30.3970%	24.7660%
22	0.0790%	0.0480%	**37**	0.1690%	0.0830%	**52**	0.3450%	0.1420%	**67**	1.5210%	1.0790%	**82**	9.4640%	5.7450%	**97**	32.0050%	26.9240%
23	0.0820%	0.0500%	**38**	0.1790%	0.0870%	**53**	0.3480%	0.1660%	**68**	1.7260%	1.2050%	**83**	10.6360%	6.4680%	**98**	33.8620%	29.3080%
24	0.0860%	0.0510%	**39**	0.1890%	0.0900%	**54**	0.3590%	0.1940%	**69**	1.9570%	1.3440%	**84**	11.9450%	7.2910%	**99**	36.0100%	31.9670%
25	0.0890%	0.0530%	**40**	0.1990%	0.0940%	**55**	0.3760%	0.2260%	**70**	2.2160%	1.4990%	**85**	13.4060%	8.2260%	**100**	38.4800%	34.9630%
26	0.0940%	0.0550%	**41**	0.2130%	0.0960%	**56**	0.4040%	0.2630%	**71**	2.5080%	1.6710%	**86**	15.0090%	9.2710%	**101**	42.0250%	38.3880%
27	0.0990%	0.0570%	**42**	0.2280%	0.0980%	**57**	0.4400%	0.3050%	**72**	2.8370%	1.8630%	**87**	16.7940%	10.4570%	**102**	46.0470%	42.3040%
28	0.1040%	0.0590%	**43**	0.2430%	0.1000%	**58**	0.4870%	0.3520%	**73**	3.2080%	2.0770%	**88**	18.7850%	11.8040%	**103**	50.5780%	46.7820%
29	0.1090%	0.0610%	**44**	0.2600%	0.1020%	**59**	0.5450%	0.4050%	**74**	3.6260%	2.3170%	**89**	21.0040%	13.3340%	**104**	55.6340%	51.8890%
30	0.1150%	0.0640%	**45**	0.2780%	0.1040%	**60**	0.6140%	0.4640%	**75**	4.0970%	2.5860%	**90**	23.4780%	15.0710%	**105+**	100.00%	100.00%
31	0.1220%	0.0660%	**46**	0.2920%	0.1040%	**61**	0.6970%	0.5290%	**76**	4.6260%	2.8890%	**91**	24.4970%	16.3830%			
32	0.1280%	0.0680%	**47**	0.3070%	0.1040%	**62**	0.7940%	0.6010%	**77**	5.2220%	3.2310%	**92**	25.5260%	17.8000%			
33	0.1360%	0.0710%	**48**	0.3220%	0.1040%	**63**	0.9050%	0.6790%	**78**	5.8900%	3.6160%	**93**	26.5950%	19.3320%			
34	0.1430%	0.0740%	**49**	0.3390%	0.1040%	**64**	1.0320%	0.7660%	**79**	6.6390%	4.0530%	**94**	27.7380%	20.9930%			

7.5.6. Table 5 - Age-related salary increase rate

Age	Rate	Age	Rate	Age	Rate	Age	Rate
20	5.29%	**35**	2.99%	**50**	1.52%	**65**	1.00%
21	5.16%	**36**	2.85%	**51**	1.49%	**66**	0.96%
22	5.02%	**37**	2.71%	**52**	1.47%	**67**	0.93%
23	4.89%	**38**	2.58%	**53**	1.44%	**68**	0.89%
24	4.76%	**39**	2.44%	**54**	1.41%	**69**	0.85%
25	4.62%	**40**	2.30%	**55**	1.38%	**70+**	0.82%
26	4.47%	**41**	2.22%	**56**	1.34%		
27	4.32%	**42**	2.14%	**57**	1.30%		
28	4.18%	**43**	2.07%	**58**	1.26%		
29	4.03%	**44**	1.99%	**59**	1.22%		
30	3.88%	**45**	1.91%	**60**	1.18%		
31	3.70%	**46**	1.83%	**61**	1.15%		
32	3.52%	**47**	1.75%	**62**	1.11%		
33	3.35%	**48**	1.68%	**63**	1.07%		
34	3.17%	**49**	1.60%	**64**	1.04%		

The total salary increase rate also includes a salary inflation component in addition to the age-related rate.

7.6. Summary of benefit provisions and contribution rates

Below is a summary of the main benefit provisions of the Staff Health Insurance Fund. For a complete description of the plan provisions, reference should be made to the Regulations and Administrative Rules of the Staff Health Insurance Fund.

Eligibility	Eligible retirees may elect to participate in the Staff Health Insurance Fund (SHIF). Retirees are eligible for after-service medical benefit if, upon retirement, they are: • Staff members age 55 and older who have at least ten years of service with the United Nations system. The last five years of service must be spent in the ILO (including TC, ISSA and ITC). • Disabled staff members, regardless of age, who are receiving a disability pension from the United Nations Joint Staff Pension Fund (UNJSPF) or other ILO (including TC, ISSA and ITC) pension scheme. The spouse and children of an eligible retiree are also eligible to participate providing they would have qualified for automatic coverage under the SHIF had the retiree continued in active service. The spouse and children are eligible for automatic coverage if: • A family allowance is paid in respect of the spouse and children under the Staff Regulations of the ILO (including TC, ISSA and ITC), or would be paid if the conditions of employment applicable to the staff member included provisions for family allowances corresponding to those contained in the respective Staff Regulations applicable to headquarters' staff. • Under the respective Staff Regulations, staff assessment is applied to the salary of the staff member at the family rate by reason of the spouse or children in question. • In the case of a child who is not automatically covered by another health insurance scheme or medical care service, if a family allowance would be payable under the applicable Staff Regulations but is not paid only because of the receipt by the staff member or the staff member's spouse of an allowance of equal or greater amount.
	Upon the death of an eligible retiree, the retiree's spouse and children may continue to participate in the SHIF if: (1) they were automatically covered dependents at the time of death; (2) they receive a survivor's benefit from the UNJSPF or other ILO (incl. TC, ISSA and ITC) pension scheme; and (3) application for voluntary coverage was made and authorization to deduct contributions from the pension signed within three months of notification to the survivor of these provisions.

Contributions	Contributions for a retiree are equal to 3.55% of the "base amount" plus any earnings derived from work for the ILO (including TC, ISSA and ITC) by the retiree (or the retiree's spouse if the spouse is automatically covered by the SHIF). The base amount is defined as the greater of: 1) the full retirement benefit including cost of living adjustments from the UNJSPF or other ILO (including TC, ISSA and ITC) pension scheme received by the retiree (or the retiree's spouse if the spouse is automatically covered by the SHIF) before reduction for any partial lump sum payment; and 2) the amount of the retirement benefit which would have been received if the individual had contributed to the applicable pension scheme for 25 years. Contributions for the surviving spouse of a retiree are equal to 3.55% of the survivor benefit the spouse would receive from the base amount defined above, plus any earnings derived from work for the ILO (including TC, ISSA and ITC). Spouses covered pay 30% of the retiree's contribution as from January 1, 2008. The first child covered contributes 10% of the retiree's contribution. An extra flat rate of 10% of the retiree's contribution will need to be contributed for all other children covered.

Treatment	Coverage
Maximum benefit/participant/year	US$150,000
Consultations with a physician (general practitioner or specialist), treatment given by a physician (excluding treatment for aesthetic purposes) and visits to a home or institution by a physician	80%
Surgical operations, including surgeon's and anesthetic services	80%
Medical imagery (X-rays, MRI, CT-scan, mammograms, etc.) made or prescribed by a physician	80%
Laboratory tests and other services made or prescribed by a physician	80%
Functional rehabilitation treatment prescribed by a physician and provided by a person authorized in the country concerned	80%, subject to a maximum and other conditions
Outpatient medical nursing services for an acute condition prescribed by a physician (other than non-medical care)	80%, subject to a maximum and other conditions
Psychiatry, psychoanalysis, or psychotherapy consultations or sessions given or prescribed by a physician	80%, subject to maximums and other conditions
Stays in a public ward in a public hospital for examination, diagnosis, or curative treatment where the institution makes a global charge for accommodation and care	100%, limited to 45 days per year
Accommodation in a recognized hospital or clinic for examination, diagnosis, or curative treatment	80%, limited to 45 days per year

Treatment	Coverage
Accommodation in a hospital or clinic for follow-up care, including cardiovascular re-education or convalescence after hospitalization	80%, subject to a maximum per day and limited to 45 days per year
Long-term nursing services in an institution	80%, subject to a maximum per day and other conditions
Stays in a hospital, nursing home, rest home, thermal center, etc. for cures or other convalescence	80%, subject to a maximum per day and other conditions
Prescription drugs, subject to prescription prior to purchase	80%
Dental care including odonto-stomatological treatment and laboratory charges for dentures; orthodontic treatment including apparatus	80%, subject to a maximum and other conditions
Optical appliances (including contact lenses)	80%, subject to a maximum and other conditions
Hearing aids	80%, subject to a maximum and other conditions
Prosthetic appliances prescribed by a physician (except dentures)	80%
Wheelchairs and similar equipment prescribed by a physician	80%
Immunizations (both adults and children) – preventative inoculations and vaccinations are covered when prescribed and given by a physician, except that there is no coverage for those required by national and international health authorities (e.g. in connection with schooling or travel).	80%

Treatment	Coverage
Emergency transportation to nearest place of treatment	80%
Transportation from one institution to another when hospitalized	80%
Other medical transportation within the area of the duty station or area of residence	80%, subject to prior approval
Funeral costs (including cremation)	100%, subject to a maximum