

REPORT

Salary Survey 2022 of Swiss Actuarial Association members

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Schweizerische
Aktuarvereinigung
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degli Attuari

REPORT

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The salary survey was carried out from April until the end of May 2022 for all members of the Swiss Actuarial Association (SAA). The salary survey was conducted online and was based on the salary and bonus information from 2021. The main goal of this salary survey was to examine the salary development on the Swiss market for actuaries since 2015 and if there is a salary gender gap. The survey was coordinated by the SAA Women's Group with the support of the University of Lausanne.

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Summary

The analysis was based on the full-time equivalent total compensation or FTETC, which is defined as:

$$\text{FTETC} = \frac{\text{salary} + \text{bonus}^1}{\text{employment rate}}$$

SAA members earn on average CHF 189'100 (median: CHF 166'200). According to the performed regression analysis, the FTETC level mostly depends on the following factors: the age (correlated with work experience), the hierarchy of position, if the respondent has a key function, has experience and / or education abroad and the job location (canton, i.e. the geography). Gender is no significant driver for income² inequality.

Overall, participants of this salary survey disclosed information about their job satisfaction as well as content regarding their income levels.

1. Introduction

The main goals of this salary survey were to replicate the survey taken in 2016 (based on 2015) and to report on the development of the income for actuaries in the Swiss market. Additionally, the focus was on how the market income develops for younger actuaries, as well as on questions like a potential income gender gap.

The survey was sent to all 1'521 members of SAA (2016: 1'300 members). Of all surveys that were filled out, 534 included answers to all questions relevant for the regression analysis. These 534 answer sets (35% of all SAA members) were therefore used in the analysis (in 2016: 468 or 36%). For the qualitative questions, the whole data set was taken into account (727 participants, 48% of all SAA members).

| | 2016 | Distribution (%) | 2022 | Distribution (%) | Increase |
|------------------------|------------|------------------|--------------|------------------|------------|
| Members SAA | 1'300 | | 1'521 | | 17% |
| Female | 310 | 24% | 419 | 28% | 35% |
| Male | 990 | 76% | 1'102 | 72% | 11% |
| Fully qualified | 744 | | 1'005 | | 35% |
| Female | 196 | 26% | 300 | 30% | 53% |
| Male | 548 | 74% | 705 | 70% | 29% |

 **Figure 1:** Development of SAA memberships

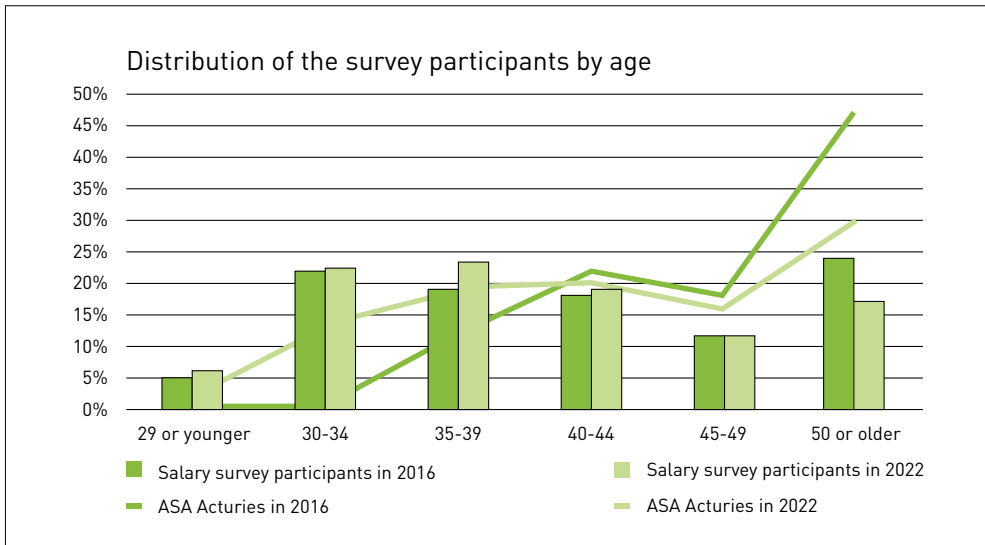


Figure 2: Age distribution of survey participants, for both SAA salary surveys (all participants)

To avoid the impacts from the outliers (high salaries) on the average income level, the N = 534 respondents were divided into two groups: Those who declared to have an annual salary³ of CHF 200'000 or less (**Group 1**, N₁=459) and those with annual salaries over CHF 200'000 (**Group 2**, N₂=75). To ensure privacy protection, respondents from Group 2 were not asked all questions in the survey (e.g. questions related to the work place). The regression analysis was conducted for all participants and then individually for each group, yielding three different sets of results within the regression analysis.

With 69%, the majority of the respondents are men (2016: 72%). As can be seen in figure 2, relative to the age distribution of the SAA members, a higher share of younger actuaries participated in the study. In the following paragraphs, we therefore concentrate on the proportions of the survey participants.

Similar to the salary survey from 2016, we had a high participation rate of younger actuaries: 29% of participants were (2016: 26%, see figure 3) in the age group <35 and 54% (2016: 50%) in the age group 35-49. This demonstrates the importance of this survey for the younger generations of actuaries as a means of gaining insights into actuarial salaries and more specifically their development over time. The more experienced actuaries (in the age bracket 50+) also had a high participation rate of 17% (2016: 24%).

There is a predominance of males and a higher proportion of younger people among our respondents' distribution. This of course has to be kept in mind when looking at the data as a whole.

2. General Information

We observe an increase in the number of SAA members, as well as in fully qualified actuaries (Figure 1). The age of participants among members in this study is lower than that of SAA actuaries. The development of SAA members and fully qualified actuaries shows a tendency that more and more women are interested in the actuarial profession.

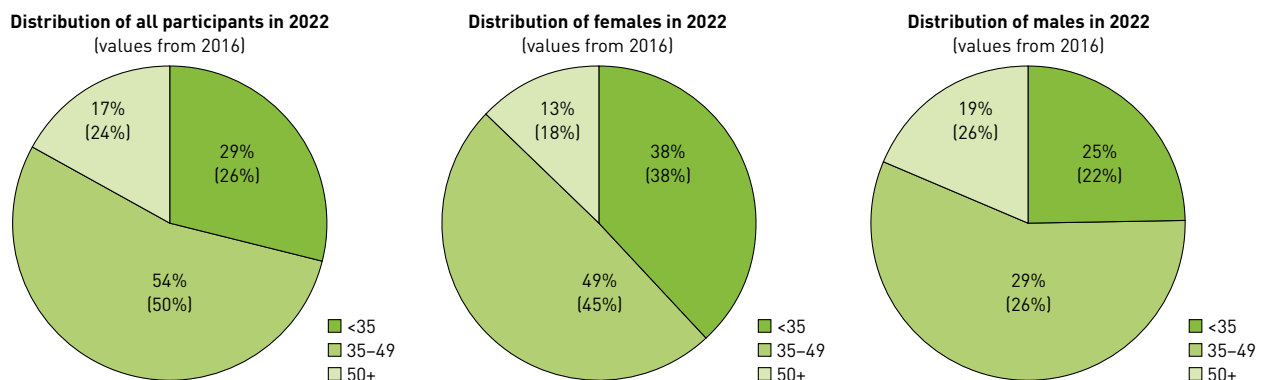


Figure 3: Age distribution of study participants, total and by gender.

Figure 4:
Overview ranking
of importance for
explanatory variables.

| Ranking of importance | All participants | Group 1 only | Group 2 only |
|-----------------------|------------------|--------------|--------------|
| Hierarchy | (1) | (2) | (1) |
| Age | (2) | (1) | |
| Experience abroad | (3) | (3) | |
| Marital status | (4) | | (4) |
| Professional Sector | (5) | | (3) |
| Canton | | (4) | |
| Place of education | | | (2) |
| Key function | | (5) | (5) |

3. Regression Results

SAA members earn on average an FTETC of CHF 189'100 (2016: CHF 197'300) with a median FTETC of CHF 166'200. The mean FTETCs from 2016 and 2022 are difficult to compare due to the fact that the study population changed considerably. Taking into account that participants of the 2022 study were on average younger than those from 2016, the decrease in the mean FTETC seems reasonable.

When looking at the factors that have the most impact on the development of the FTETC, it is important to differentiate between the above-mentioned groups 1 (with an annual salary of CHF

200'000 or less) and 2 (with an annual salary over CHF 200'000). To determine the explanatory model, UNIL combines a forward and backward stepwise selection algorithm to find the set of explanatory variables that minimizes AIC.⁴

When looking at all participants together, hierarchy and age are the most important explanatory variables for the FTETC. The work experience abroad, the marital status and the professional sector (private vs. government sector) are important as well. When participants are split into group 1 and group 2, we can see that both groups are also driven by hierarchy, and additionally by key function (although the statistical significance is weak for group 2).

| Variable | Sample (in %) | Mean FTETC (in thd.) | Variable | Sample (in %) | Mean FTETC (in thd.) |
|---------------------------|---------------|----------------------|----------------------------|---------------|----------------------|
| Age | | | Work experience | | |
| <30 | 6.4 | 118.0 | <5 | 12.0 | 132.5 |
| 30-34 | 22.3 | 139.3 | 5-10 | 32.8 | 148.2 |
| 35-39 | 23.4 | 178.5 | 11-20 | 29.4 | 183.8 |
| 40-44 | 18.9 | 193.8 | 21-30 | 9.6 | 210.4 |
| 45-49 | 12.0 | 232.3 | Over 30 | 2.2 | 191.2 |
| 50 or older | 17.0 | 260.0 | NR | 14.0 | 329.4 |
| Gender | | | Professional Sector | | |
| Male | 69.3 | 197.6 | Employee - Private sector | 95.1 | 189.9 |
| Female | 30.7 | 170.1 | Employee - government | 4.9 | 173.5 |
| Marital status | | | Canton | | |
| Married | 56.4 | 209.9 | Zurich | 54.9 | 169.0 |
| Single | 26.2 | 157.1 | Others | 31.1 | 161.4 |
| Others | 17.4 | 170.2 | NR | 14.0 | 329.4 |
| Key function | | | Experience Abroad | | |
| No | 72.7 | 171.4 | No | 71.5 | 180.4 |
| Yes | 27.3 | 236.3 | Yes | 28.5 | 211.0 |
| Hierarchy | | | Education | | |
| Employee | 30.5 | 139.4 | Master | 57.1 | 177.5 |
| Middle management | 25.5 | 214.3 | PhD | 20.0 | 206.6 |
| Executive staff | 10.9 | 316.6 | Diplom (Uni / ETH) | 16.9 | 198.2 |
| Expert position | 33.1 | 173.8 | Others | 6.0 | 216.4 |
| Place of education | | | Type of employment | | |
| In Switzerland | 76.4 | 181.4 | Full | 94.4 | 190.0 |
| Abroad | 16.3 | 224.0 | Partial | 5.6 | 174.5 |
| Both in CH and abroad | 7.3 | 192.1 | | | |
| N | 534 | 189.1 | N | 534 | 189.1 |

Figure 5a: Participants distribution by main drivers. All participants. (NR = Not reported)

| | Estimate | Std. Error | Significance | t value | Importance (rank) |
|---|--------------|-------------|--------------|---------|-------------------|
| [Intercept] | 152'786.3003 | 9'036.4327 | *** | 16.91 | |
| Age (Baseline: 35-39) | | | | | (2) |
| <30 | -31'752.8497 | 14'502.4175 | * | -2.19 | |
| 30-34 | -19'579.8496 | 9'498.9814 | * | -2.06 | |
| 40-44 | 6'854.4781 | 9'500.1562 | | 0.72 | |
| 45-49 | 41'267.7705 | 10'967.4534 | *** | 3.76 | |
| 50 or older | 58'073.5862 | 10'025.4379 | *** | 5.79 | |
| Professional Sector (Baseline: Private Sector) | | | | | (5) |
| Employee - government | 25'987.9058 | 14'351.6368 | | -1.81 | |
| Marital status (Baseline: Married) | | | | | (4) |
| Single | -14'872.1698 | 7'767.1487 | | -1.91 | |
| Others | -10'381.7180 | 8'599.1016 | | -1.21 | |
| Hierarchy (Baseline: Employee) | | | | | (1) |
| Middle management | 47'452.2624 | 9'067.9804 | *** | 5.23 | |
| Executive staff | 126'095.3809 | 12'169.9221 | *** | 10.36 | |
| Expert position | 7'219.8322 | 8'428.0713 | | 0.86 | |
| Experience abroad (Baseline: No) | | | | | (3) |
| Yes | 18'952.4675 | 6'817.4655 | ** | 2.78 | |

Figure 5b: Regression analysis. All participants. The variables «canton» and «work experience» are omitted in this analysis as they are not available for salaries above CHF 200'000.

However, while age and experience abroad are important for group 1, further drivers for group 2 are the place of education and the professional sector (private sector vs. government). In addition, geography is an important factor for group 1 which was excluded from the data for group 2. It was consequently also excluded from the analysis over all participants.

The importance ranking of each variable is disclosed in the respective regression table (column «importance (rank)») in figures 4, 5a and 5b. The detailed mean FTETC and regression analysis output tables (split by the three data sets) can be found in the Appendix.

Figure 4 gives an overview of the relevant explanatory variables, split by the three data sets (all participants, groups 1 and 2). Figures 5a and 5b offer an overview over the mean FTETCs by category for all participants together.

Please note that age and work experience are strongly correlated. The regression model will avoid correlated variables and therefore, work experience was not separately analysed. The two variables are not identical in their characteristics but for the purpose of this salary survey, age can be used as a good measure and / or substitute for work experience.

Similar to the last survey, it is worth noting that 63.8% of all participants of group 1 are located in Zurich. Basel, Vaud and Bern have sample sizes between roughly 7% and 9% and can be presented stand-alone. All other cantons are grouped together for confidentiality reasons and in order to get meaningful averages / median FTETCs. The category «Others» contains all

other cantons with a very high variability over sectors, age and hierarchy, resulting in a higher mean FTETC than Zurich.

The detailed mean FTETC and regression analysis output tables (split by the three data sets: all, group 1 and group 2) can be found in the Appendix.

The «sandbox»

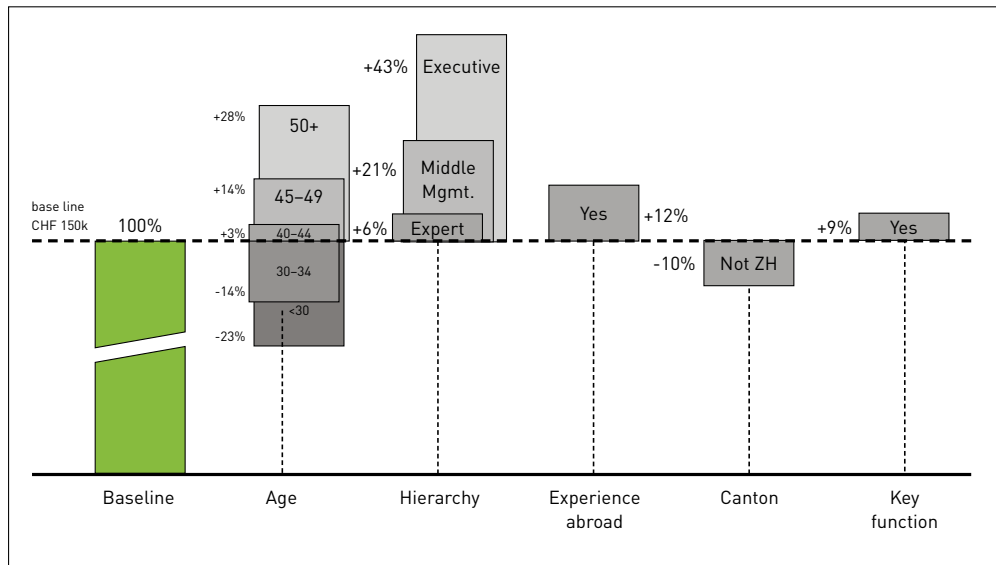
Due to the fact that the FTETC depends on several drivers, a direct comparison between the regression analysis results and a single income is probably not easily done at a glance. In order to give actuaries the opportunity to compare their own income with the survey results, we therefore created a «sandbox» which allows the use of a building block approach⁵ where the attributes relevant for income differences can be presented in a simplified way and then added in such a way that they fit the personal profile. Please keep in mind that the given percentages (deltas) are averages only and thus ignore the confidence intervals given by the regression analysis.

Figure 6: Median and mean salaries by geography, group 1.

| Canton | sample [%] | mean_FTETC | median_FTETC |
|------------|---------------|--------------|--------------|
| Zurich | 63.8% | 169.0 | 156.3 |
| Basel | 9.2% | 155.9 | 150. |
| Vaud | 8.3% | 149.2 | 137.3 |
| Bern | 7.4% | 157.8 | 158.1 |
| Others | 11.3% | 177.0 | 159.6 |
| All | 100.0% | 166.2 | 155.7 |

Figure 7:

Deltas of the relevant explanatory variables to the base line FTETC. Group 1 only. Variables on the horizontal axis are ordered by importance rank as shown in figure 4.



The sandbox is split into two parts in order to make the impacts of the attributes more comprehensible. In a first step (figure 7a), we address all parameters that were identified to be of statistical significance except for the age (or experience) which is then addressed separately in a second step (figure 7b). It is important to note that the deltas given for age (or experience) are derived from age groups and translated into yearly values. See explanations in the box following figure 7b.

Group 1

For group 1, we defined the «base actuary»⁶ as an employee aged 35-39 working in Zurich with no key function⁷ and no experience abroad. The FTETC of this «base actuary» amounts to 149'500 CHF. The example regression parameters have the following interpretations:

- Age (experience): Compared to the base line age bracket of 35-39, the changes in FTETC depending on the age bracket are -23% (<30), -14% (30-34), +3% (40-44), +14% (45-49) and +28% (50+).
- Hierarchy for the executive: For a position higher than employee, an actuary can expect an increase in FTETC of 6%, 21% and 43% compared to the base line, for experts, middle management and executives respectively.
- Professional experience abroad: For those who have experience abroad an increase of 10% in FTETC is to be expected.
- Canton: For working in a canton other than Zurich, a decrease in FTETC of 10% is to be expected.
- Key function: having a key function translates on average into +9% of FTETC.

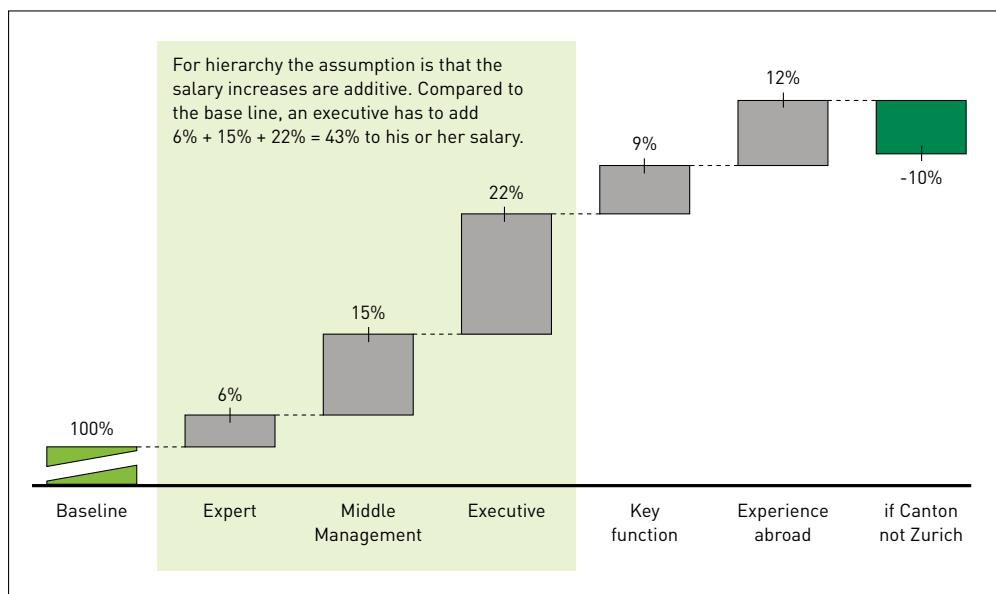


Figure 7a: Selected deltas to mean base line FTETC (without age differences), group 1 only. Confidence intervals were ignored.

With this information we created the waterfall graph in figure 7a that outlines the changes in mean FTETC due to the identified main drivers.

All these interpretations are valid with the assumption of *ceteris paribus* (other conditions remain unchanged). For the following simplified visualisation examples (7a and 7b), the correlation between variables is ignored. Therefore, please treat the following results interpretation as an approximation.

Figure 7a: base line vs. main drivers without age (simplified approach)

A person in the base line group of 35-39 years in middle management who works in a canton other than Zurich and has a key function would adjust the base line FTETC of 149'500 CHF as follows: (+ 6% + 15%) (expert plus middle management) - 10% (works not in Zurich) + 9% (has key function) = + 20%, thus yielding a new average FTETC of around 179'400 CHF.

Figure 7b: base line vs. age

From the regression analysis, deltas based on age compared to the base line are always referring to age groups. For individuals who want to assess their expectation of FTETC when taking age differences into account, this presents a difficulty. For the sake of the sandbox it was therefore desirable to present the impacts on age (or experience) on a yearly basis. For the exact results from the regression analysis please refer to the appendix, table c. In order to be able to present deltas on a yearly basis, figure 7b contains two simplifications:

- There is no differentiation within the base line age group, e.g.: for the base line group of 35-39, the five years in this group are not translated into a yearly age difference and the base line is the same for all people in this age group.
- The percentages given for each year of age (differentiated by younger and older than the base line age) are an approximation derived from the estimated deltas for each age group compared to the base line. The deltas are adjusted by the number of years that passed between the age group and the base line age.

The changes in FTETC are rather larger for young professionals (~2.5% for each year of age difference for age groups <30 and 30-34) compared to more experienced professionals (~1% for each year of age difference for the age groups 40-44, 45-49 and 50+).

A person in the base line group of 35-39 years of age would not adjust the base line FTETC of 149'500 CHF. Depending on the specific age group (younger than base line or older than base

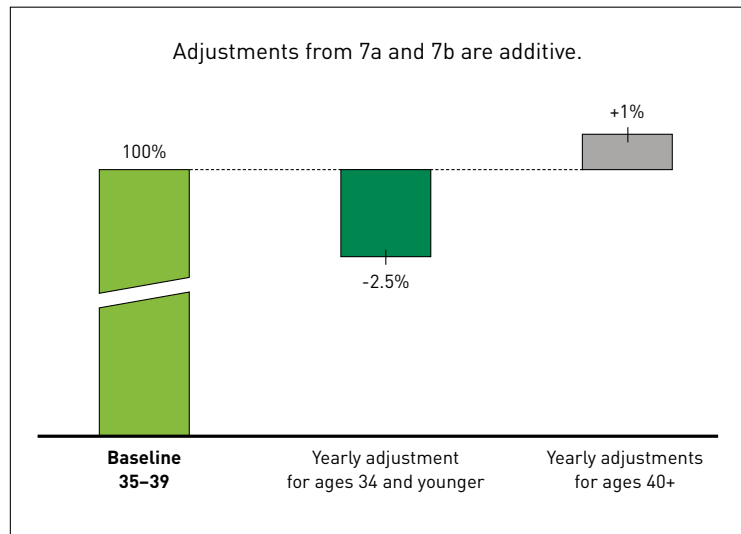


Figure 7b: Deltas per year of life compared to mean base line FTETC, group 1 only.

line) another adjustment applies for each year of age younger or older than the base line. For example, a 45 year-old person has an additional age (or experience) advantage over the base line of 6 years and therefore needs to adjust the base line FTETC by $6 * 1\%$, thus resulting in an FTETC of 158'500 CHF. A 28 year-old person has an age disadvantage compared to the base line of 7 years and therefore needs to adjust the base line FTETC by $7 * (-2.5\%)$, resulting in an FTETC of 123'300 CHF.

Group 2

For group 2, the professional sector has the largest impact on the FTETC: Employees in the private sector earn on average around 100'000 CHF more than employees working for the government. The hierarchy is almost equally important. Education abroad also has a significant positive impact on the FTETC. For other positive impacts, such as the marital status, it seems plausible that this is merely a correlation between age as driver and the fact that older people are more likely to be married than younger ones. Please refer to the appendix for a more detailed view on the group 2 data and the FTETC analysis.

| | mean_FTETC | Median_FTETC |
|------------|--------------|--------------|
| Group 1 | 166.2 | 155.7 |
| Group 2 | 329.4 | 297.0 |
| All | 189.1 | 166.2 |

Figure 8: Mean and median FTETCs, Group 1 vs. Group 2.

The ratio between bonus level to the annual salary was checked for the age categories and the hierarchy. Taking into account all participants from both groups and the age categories we made the following observation:

- The bonus level was growing slowly with age from 7% (ages < 30) to 13% (ages 50+). For Group 2, the bonus level is not directly linked with age/work experience like in Group 1, however it does increase slightly from 18% to 21%.
- When it comes to the bonus level with the split of the hierarchy level, we observed that in Group 1, there is a constant and smoother increase of the bonus level

from 7% (employee) to 19% (executive staff). For Group 2 the bonus range is higher (from 16% to 24%), however again the bonus level is not directly linked to the hierarchy position.

- When we analyse both groups together, we get similar results as for Group 1. For the age category split we can see the stable increase by age from 7% to 15% and for the hierarchy split we also get the stable increase by hierarchy from 8% to 19%.

Please be reminded that the bonus is included in the FTETCs given throughout this paper.

4. Further aspects beyond the regression analysis

Impact of gender

On average, female actuaries earn about 14'000 CHF less than males. The regression applied to the data did not indicate that gender is an explanatory variable for income differences. The difference rather seems to stem from the fact that participating women were on average younger than the participating men and as a consequence a higher share of women had a lower seniority than men (73% of all female participants were recorded as employee or expert, compared to 60% of all male participants).

Looking at the age distribution within the gender category, hierarchy and age⁸ (figure 11), we can see that the highest shares per hierarchical position correspond to the same age brackets for men and women. For example, the highest share of employees can be seen at the age bracket of 30–34 for men and women alike.

For expert positions and middle management, the highest share is at the age bracket 35–39, again for men and women alike.⁹ This corresponds well with the fact that the regression analysis identified age as important driver for income differences. We conclude that there is no significant income discrimination for female actuaries.

Impact of Part-time employment

In this survey, we asked specifically about part-time employment. Due to the fact that we considered any employment rate of 80% or more as full-time, 94% of the participants indicated working full-time. From those who indicated working part-time, a majority (80%) are women. Of all participants working part-time, 87% indicated that they are married.

The mean and median FTETCs in the part-time group are showing greater variability than the full-time group, owing to the fact that this group is of a smaller sample size. All participants working part-time were in group 1 while those working full-time also include the participants from group 2 (with salaries above CHF 200'000).

On average, participants with a history of working part-time are doing so for 8.8 years with an average part-time employment rate of 78%¹⁰ over the course of their career. The most common reasons given for working part-time are having a family and aiming for a better work-life balance.

| | mean_FTETC | median_FTETC |
|--------|------------|--------------|
| Female | 178.5 | 162.9 |
| Male | 192.7 | 172.5 |

Figure 9: Median and mean salaries according to gender, all participants.

| | Employee | Expert Position | Middle Mgmt. & Exec. Staff |
|-------|----------|-----------------|----------------------------|
| Women | 40% | 33% | 27% |
| Men | 26% | 33% | 40% |

Figure 10: Distribution of participants for hierarchy, women vs. men, all participants.

| Gender | | Employee | Expert Position | Middle Management | Executive Staff |
|-------------|-----------------------------------|----------|-----------------|-------------------|-----------------|
| Women | Number of participants (N) | 65 | N ₁ | N ₂ | N ₃ |
| | Age | | | | |
| | <25 | 0% | 0% | 0% | 0% |
| | 25-29 | 25% | 2% | 3% | 0% |
| | 30-34 | 35% | 22% | 23% | 10% |
| | 35-39 | 20% | 28% | 25% | 20% |
| | 40-44 | 9% | 22% | 23% | 30% |
| | 45-49 | 5% | 7% | 17% | 0% |
| 50 or older | 6% | 19% | 9% | 40% | |
| Men | Number of participants (N) | 98 | 123 | 101 | 48 |
| | Age | | | | |
| | <25 | 2% | 0% | 0% | 0% |
| | 25-29 | 12% | 1% | 2% | 0% |
| | 30-34 | 46% | 18% | 7% | 2% |
| | 35-39 | 21% | 22% | 31% | 15% |
| | 40-44 | 10% | 20% | 28% | 17% |
| | 45-49 | 3% | 19% | 15% | 21% |
| 50 or older | 6% | 20% | 17% | 45% | |

Figure 11: Distribution of participants for age by gender and hierarchy, all participants.

*N1, N2, N3 for confidentiality reasons, we don't share the precise female participant's number.

| Age | Part-time | | | Full-time | | |
|--------------|---------------|--------------|--------------|---------------|--------------|--------------|
| | sample (%) | mean_FTETC | median_FTETC | sample (%) | mean_FTETC | median_FTETC |
| <30 | 0.0% | - | - | 6.7% | 118.0 | 113.4 |
| 30-34 | 13.3% | 171.3 | 151.0 | 22.8% | 138.1 | 132.0 |
| 35-39 | 20.0% | 168.6 | 160.8 | 23.6% | 179.0 | 167.0 |
| 40-44 | 43.3% | 181.1 | 169.4 | 17.5% | 195.7 | 180.8 |
| 45-49 | 13.3% | 165.2 | 157.5 | 11.9% | 236.8 | 200.5 |
| 50 or older | 10.0% | 174.7 | 171.2 | 17.5% | 262.9 | 219.2 |
| Total | 100.0% | 174.5 | 163.8 | 100.0% | 190.0 | 166.8 |

Figure 12: Mean and median FTETCs, part-time vs. full-time employment by age.

| | Number (N) * | mean_FTETC | median_FTETC |
|------------------------------|--------------|------------|--------------|
| Audit & Consulting | 86 | 184.8 | 173.5 |
| Banking & Finance | N1 | 292.6 | 246.0 |
| Primary Insurance & Pensions | 264 | 176.0 | 155.6 |
| Reinsurance | 145 | 205.4 | 175.0 |
| Other | N2 | 194.6 | 174.0 |

Figure 13: Mean and median FTETCs, grouping by indicated work sector, all participants.

*N1, N2: For confidentiality reasons, we do not share the precise participant's number.

Impact of Work Sector

The design of our salary survey unfortunately did not allow for a direct analysis of the impact of the work sector within the regression analysis. This is due to the fact that the relevant questions were set up as multi-choice questions. However, looking at the sector separately (Figure 13) we can conclude the following information on it:

- By comparing the mean and median FTETCs of primary insurance (including pension funds and the like) with reinsurance, we can see that on average, an actuary working for a reinsur-

ance company earns 17% more than an actuary working for a primary insurance company.

- Working for an audit and / or consulting firm or or in banking & finance also on average leads to a higher FTETC. However, the sample size for Banking & Finance was very small and therefore, the result for this sector is uncertain.

Impact of self-employment

Overall, only a small fraction of survey participants identified as self-employed. We will therefore only report on self-employment on

| | mean_FTETC | median_FTETC |
|--------|------------|--------------|
| Income | 159.0 | 161.0 |

Figure 14: mean and median FTETC for self-employed survey participants.

| | sample [%] |
|----------------------------------|------------|
| Age | |
| <50 | 29.0% |
| 50+ | 71.0% |
| Work experience abroad | |
| Yes | 78.6% |
| No | 21.4% |
| Actuarial education | |
| Abroad | 64.3% |
| In Switzerland | 35.7% |
| Sector | |
| Consulting | 85.7% |
| Other | 14.3% |
| Experience with part-time | |
| Yes | 42.9% |
| No | 57.1% |

Figure 15: Sample sizes per explanatory variable for self-employed survey participants.

a qualitative level. The majority of self-employed actuaries work in consulting (>70%). Most of them are self-employed for more than 5 years. Almost half of them have experience with working part-time. Income levels seem to be comparable to the levels observed for all participants.

5. Job satisfaction and other aspects

When compared to the annual Swiss median gross salary for academic professions (CHF 104'000) and managerial positions (CHF 130'000)¹¹ we can see that actuaries in Switzerland are well paid (median FTETC of CHF 166'200). But what about their job satisfaction? The participants in the study are satisfied with their jobs and their income and only a small share of actuaries indicate that they are unhappy with their position (6.4%), their income (14%) or their benefits (12.5%). In other words, current satisfaction with position, income and benefits is high. Nevertheless, a share of 51% of all participants indicated that they could be tempted to change their job for an income increase of at least 15%.

The difference in the shares indicating unhappiness with the position on the one hand and satisfaction with the income or benefits on the other could be an indication that some people would be more satisfied and less willing to change employers if their income could be increased, especially since 46% of participants expect future demand for actuaries to increase, and another 46% expect future demand to remain stable. 48% of participants think that if they had to look for a new position in the current market conditions, they would have a high probability for finding a similar or even better position than their current one.

Covid pandemic

The last 2 years of Covid were a difficult time, but difficult times often also bring positive impulses for the future. In order to get a better idea on how the actuarial community is feeling, we included several questions about the Covid pandemic.

Almost half of the participants who commented on the Covid questions say that they were not affected by the pandemic (49% of those participants giving an answer). Of those who said they were affected by the pandemic, a lot of people commented positively on the fact that they gained in flexibility due to the extended home office.

On the other hand, limited personal contact to co-workers with more (online) meetings and a decrease in motivation and innovation were mentioned as drawbacks, suggesting that for most people remote work in combination with office work needs to be balanced out. Another negative mentioned quite frequently was an increase in the workload. For some participants, remote work resulted in a decline of motivation, well-being and mental health.

6. Conclusion

From the 2022 survey results, we can conclude that the actuarial profession in Switzerland is well-paid and actuaries are relatively happy doing their job. Compared to the 2016 salary survey, the results seem to be confirmed and stable in the times of the latest pandemic and the economic changes. The main drivers didn't change. Age (which correlates with work experience) and hierarchy play a major role, as does the work canton. The continual increase in the number of SAA members as well as fully qualified actuaries shows that the actuarial profession continues to be highly attractive.

Working part-time is more common for middle-aged female actuaries. Also, their incomes scaled to 100% do not significantly differ from

the incomes of participants working full-time. We could see that the part-time job ratio is lower for actuaries in higher positions and of older age.

The reinsurance sector as well as banking and finance¹² seem to be the best paying sectors for actuaries on the Swiss market. These are followed by Audit & Consulting and the Primary Insurance & Pensions sector.

We didn't observe a significant gender gap discrepancy. We did observe that the female ratio is much lower in the higher positions. We have more and more females becoming SAA members and fully qualified actuaries, so over time this could result in more gender balance and comparability.

Authors' notes

We would like to thank all participants who dedicated their time to respond and share their knowledge with us. Professor Joël Wagner and Andrey Ugarte from the Department of Actuarial Sciences of the University of Lausanne, thank you for the anonymous data aggregation, conducting the analysis, and for your valuable support and advice in setting up the survey. We also thank Sandra Moringa and Christophe Heck for sharing their insights with us. Last but not least, we thank Valérie Lebrun and the SAV for their valuable contributions and support. We hope this survey renders useful information to all members of the SAA and we would like to encourage this survey to become an established feature to be regularly repeated in the future.

¹ Please note that for the salary survey 2016, the bonus and other benefits were not converted into a full-time equivalent.

² For the purpose of this document, income and FTETC are used synonymously.

³ For the split into group 1 and group 2, only the annual salary before conversion into a full-time equivalent was used. The bonus was not taken into account.

⁴ The Akaike information criterion (AIC) is an estimator of prediction error and thereby relative quality of statistical models for a given set of data. Given a collection of models

| Variable | Share (%) | Variable | Share (%) |
|---|-----------|------------------------------------|-----------|
| Happiness in position | | Happiness with benefits | |
| Happy | 81.1 | Happy | 55.1 |
| Neutral | 11.8 | Neutral | 24.5 |
| Unhappy | 6.4 | Unhappy | 12.5 |
| NA | 0.7 | NA | 7.9 |
| Happy with income | | Future demand for actuaries | |
| Happy | 64.2 | Decreasing | 6.2 |
| Neutral | 21.2 | Increasing | 46.1 |
| Unhappy | 14.0 | Stable | 46.3 |
| NA | 0.6 | NA | 1.5 |
| Probability of finding a similar or better position than current one | | | |
| Very high | 7.3 | | |
| High | 47.8 | | |
| Low | 36.9 | | |
| Very low | 6.4 | | |
| NA | 1.7 | | |

for the data, AIC estimates the quality of each model, relative to each of the other models. Thus, AIC provides a means for model selection.

⁵ Fans of IFRS17 will love this approach. Hopefully, everyone else will love it too.

⁶ Our base line in the waterfall graphs in figures 7a and 7b.

⁷ Appointed actuary (VA), Actuarial Function Holder SII, PK Expert, or similar.

⁸ Looking at work experience instead of age gives a very similar picture.

⁹ For executive staff, the sample size was too small to yield meaningful information on this point.

¹⁰ Please note that this average may include years of full-time employment which preceded the current part-time employment.

¹¹ According to the Federal Office for Statistics, annual median gross income in CHF for 2021 for full-time employment. Income components include the gross salary, 13th and 14th monthly salary, bonuses and gratuities. Source: table je-d-03.04.04.00.03 <https://www.bfs.admin.ch/asset/de/22706274>

¹² This representative group was small and members of this group all had high incomes.

Figure 16: Job satisfaction and outlook on development of actuarial profession, all participant.

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Appendix

Bonus payments relative to FTETC


As mentioned in the report, the bonus payments are included in the FTETCs given throughout this paper. In order to give a better understanding of how the bonus payments develop over time,

figures 17a–17f show the ratio of bonus payments vs. the FTETC by hierarchy and by age group (for all participants, for group 1 and for group 2 separately).


| Hierarchy | Bonus in % of FTETC |
|-------------------|---------------------|
| Employee | 7.6 |
| Expert position | 9.5 |
| Middle management | 14.3 |
| Executive staff | 19.1 |

 **Figure 17a:** Bonus payments of FTETC by hierarchy. All participants.


| Age | Bonus in % of FTETC |
|-------|---------------------|
| <30 | 7.3 |
| 30-34 | 7.9 |
| 35-39 | 11.2 |
| 40-44 | 11.7 |
| 45-49 | 13.3 |
| 50+ | 14.7 |

 **Figure 17b:** Bonus payments in % of FTETC by age group. All participants.


| Hierarchy | Bonus in % of FTETC |
|-------------------|---------------------|
| Employee | 7.5 |
| Expert position | 9.1 |
| Middle management | 13.3 |
| Executive staff | 19.2 |

 **Figure 17c:** Bonus payments of FTETC by hierarchy. Group 1 only.


| Age | Bonus in % of FTETC |
|-------|---------------------|
| <30 | 7.3 |
| 30-34 | 7.7 |
| 35-39 | 10.7 |
| 40-44 | 10.5 |
| 45-49 | 11.9 |
| 50+ | 13.0 |

 **Figure 17d:** Bonus payments in % of FTETC by age group. Group 1 only.

| Hierarchy | Bonus in % of FTETC |
|-------------------|---------------------|
| Employee | 23.6 |
| Expert position | 16.1 |
| Middle management | 17.6 |
| Executive staff | 19.0 |

 **Figure 17e:** Bonus payments of FTETC by hierarchy. Group 2 only.

| Age | Bonus in % of FTETC |
|-------|---------------------|
| <30 | NA |
| 30-34 | 18.5 |
| 35-39 | 19.6 |
| 40-44 | 21.2 |
| 45-49 | 16.4 |
| 50+ | 17.6 |

 **Figure 17f:** Bonus payments in % of FTETC by age group. Group 2 only.

Regression Analysis: Main descriptive Statistics

Note: The significance levels are . $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

| | Estimate | Std. Error | Significance | t value | Importance (rank) |
|---|--------------|-------------|--------------|---------|-------------------|
| [Intercept] | 152'786.3003 | 9'036.4327 | *** | 16.91 | |
| Age (Baseline: 35-39) | | | | | (2) |
| <30 | -31'752.8497 | 14'502.4175 | * | -2.19 | |
| 30-34 | -19'579.8496 | 9'498.9814 | * | -2.06 | |
| 40-44 | 6'854.4781 | 9'500.1562 | | 0.72 | |
| 45-49 | 41'267.7705 | 10'967.4534 | *** | 3.76 | |
| 50 or older | 58'073.5862 | 10'025.4379 | *** | 5.79 | |
| Professional Sector (Baseline: Private Sector) | | | | | (5) |
| Employee - government | 25'987.9058 | 14'351.6368 | | -1.81 | |
| Marital status (Baseline: Married) | | | | | (4) |
| Single | -14'872.1698 | 7'767.1487 | | -1.91 | |
| Others | -10'381.7180 | 8'599.1016 | | -1.21 | |
| Hierarchy (Baseline: Employee) | | | | | (1) |
| Middle management | 47'452.2624 | 9'067.9804 | *** | 5.23 | |
| Executive staff | 126'095.3809 | 12'169.9221 | *** | 10.36 | |
| Expert position | 7'219.8322 | 8'428.0713 | | 0.86 | |
| Experience abroad (Baseline: No) | | | | | (3) |
| Yes | 18'952.4675 | 6'817.4655 | ** | 2.78 | |

Table a: Regression analysis – All participants. The variables «canton» and «work experience» are omitted in this analysis as they are not available for salaries above CHF 200'000.

| Variable | Sample (in %) | Mean FTETC (in thd.) | Variable | Sample (in %) | Mean FTETC (in thd.) |
|---------------------------|---------------|----------------------|--------------------------------|---------------|----------------------|
| Age | | | Work experience | | |
| <30 | 7.4 | 118.0 | <5 | 13.9 | 132.5 |
| 30-34 | 25.5 | 137.2 | 5-10 | 38.1 | 148.2 |
| 35-39 | 25.5 | 167.9 | 11-20 | 34.2 | 183.8 |
| 40-44 | 19.4 | 179.5 | 21-30 | 11.1 | 210.4 |
| 45-49 | 9.6 | 191.6 | Over 30 | 2.6 | 191.2 |
| 50 or older | 12.6 | 209.9 | | | |
| Gender | | | Professional Sector | | |
| Male | 66.9 | 169.3 | Employee – Private sector | 95.4 | 166.6 |
| Female | 33.1 | 159.9 | Employee – government | 4.6 | 158.2 |
| Marital status | | | Place of education | | |
| Married | 52.5 | 177.0 | In Switzerland | 77.5 | 162.4 |
| Single | 28.8 | 150.4 | Both in Switzerland and abroad | 7.2 | 170.7 |
| Others | 18.7 | 160.1 | Abroad | 15.3 | 183.4 |
| Key fraction | | | Experience abroad | | |
| No | 78.0 | 157.8 | No | 72.1 | 159.1 |
| Yes | 22.0 | 196.1 | Yes | 27.9 | 184.6 |
| Hierarchy | | | Education | | |
| Employee | 35.3 | 138.2 | Master | 59.9 | 157.8 |
| Executive staff | 5.2 | 235.7 | Diplom (Uni / ETE) | 16.6 | 176.6 |
| Expert position | 36.4 | 167.7 | Others | 5.9 | 185.1 |
| Middle management | 23.1 | 191.0 | PhD | 17.6 | 178.7 |
| Type of employment | | | Canton | | |
| Full | 93.5 | 165.6 | Zurich | 63.8 | 169.0 |
| Partial | 6.5 | 174.5 | Others | 36.2 | 161.4 |
| N | 459 | 166.2 | N | 459 | 166.2 |

Table b: Information on the Group 1 respondents.

| | Estimate | Std. Error | Significance | t value | Importance (rank) |
|---|--------------|-------------|--------------|---------|-------------------|
| (Intercept) | 149'534.0438 | 6'379.9308 | *** | 23.44 | |
| Age (Baseline: 35-39) | | | | | (1) |
| <30 | -34'792.1399 | 10'204.2642 | *** | -3.41 | |
| 30-34 | 20'358.7002 | 6'756.3582 | ** | -3.01 | |
| 40-44 | 4'138.2013 | 7'090.0853 | | 0.58 | |
| 45-49 | 20'982.8863 | 8'897.3301 | * | 2.36 | |
| 50 or older | 42'467.1052 | 8'204.0549 | *** | 5.18 | |
| Hierarchy (Baseline: Employee) | | | | | (2) |
| Executive staff | 63'922.5684 | 12'427.7011 | *** | 5.14 | |
| Expert position | 8'795.6948 | 6'150.0147 | | 1.43 | |
| Middle management | 31'327.8919 | 7'060.8723 | *** | 4.44 | |
| Canton (Baseline: Zurich) | | | | | (4) |
| Others | -15'007.0479 | 5'113.1268 | ** | -2.94 | |
| Key function (Baseline: No) | | | | | (5) |
| Yes | 13'785.8953 | 6'376.9249 | * | 2.16 | |
| Experience abroad (Baseline: No) | | | | | (3) |
| Yes | 17'526.7223 | 5'370.9905 | ** | 3.26 | |

Table c: Regression results for Group 1.

| Variable | Sample (in %) | Mean FTETC (in thd.) | Variable | Sample (in %) | Mean FTETC (in thd.) |
|--------------------------------|---------------|----------------------|----------------------------|---------------|----------------------|
| Age | | | Gender | | |
| Younger than 45 | 29.3 | 308.5 | Female | 16.0 | 299.7 |
| 45+ | 70.7 | 338.1 | Male | 84.0 | 335.1 |
| Marital status | | | Professional sector | | |
| Married | 80.0 | 341.9 | Employee - Private sector | 93.3 | 336.0 |
| Not married | 20.0 | 279.6 | Employee - government | 6.7 | 237.6 |
| Key function | | | Experience abroad | | |
| No | 40.0 | 333.5 | No | 68.0 | 318.9 |
| Yes | 60.0 | 326.6 | Yes | 32.0 | 351.6 |
| Education | | | Hierarchy | | |
| Master | 40.0 | 357.5 | Other | 46.7 | 372.3 |
| Others | 25.3 | 333.9 | Expert position | 13.3 | 276.8 |
| PhD | 34.7 | 293.7 | Middle management | 40.0 | 296.9 |
| Place of education | | | | | |
| In Switzerland | 22.7 | 311.5 | | | |
| Abroad | 22.7 | 391.1 | | | |
| Both in Switzerland and abroad | 8.0 | 309.7 | | | |
| N | 75 | 329.4 | N | 75 | 329.4 |

Table d: Information on the Group 2 participants.

| Estimate | Std. Error | Significance | t value | Importance (rank) |
|--|---------------|--------------|---------|-------------------|
| (Intercept) | 411'162.2863 | 33'128.7762 | *** | 12.41 |
| Professional sector (Baseline: Private) | | | | (3) |
| Employee - government | -104'123.3091 | 51'518.5945 | * | -2.02 |
| Marital (Baseline: Married) | | | | (4) |
| Not married | -59'358.7119 | 32'435.7277 | | -1.83 |
| Hierarchy (Baseline: Other) | | | | (1) |
| Middle management | -90'711.6494 | 30'494.9419 | ** | -2.97 |
| Expert position | -81'017.8507 | 40'575.2902 | * | -2.00 |
| Key function (Baseline: No) | | | | (5) |
| Yes | -45'913.5553 | 28'788.7520 | | -1.59 |
| Place of education (Baseline: In Switzerland) | | | | (2) |
| Abroad | 66'432.0859 | 31'174.2001 | * | 2.13 |
| Both in Switzerland and abroad | -42'215.6661 | 48'554.4335 | | -0.87 |

Table e: Regression results for Group 2.