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사회복지학석사학위논문

Adequacy of pension provisions in Switzerland

스위스 연금급여의 적절성

2016 년 2 월

서울대학교 대학원

사회복지학과

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Abstract

Adequacy of pension provisions in Switzerland

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There exists an apparent contradiction: on the one side, Switzerland's three pillars pension system is presented as an exemplary model worldwide. In 1994 the World Bank in a well known report "Averting the Old Age Crisis" endorsed the three pillars pension system, mentioning the Netherlands, Switzerland as successful examples. With a 15.8% poverty rate among old age in 2012, the Confederation (Swiss government) finds its pensions system effective and doesn't include them in the priority group (i.e. single-parent households) of its averting poverty policy. On the other side, in international comparison, in 2010 Switzerland was lagging behind with 21.8% of old age poverty (poverty line fixed at 50% of median income), far above the OECD average of 12.8%. For the EU, Switzerland was in 2013 also significantly above the EU-28 average of 18.3%, with a national level of 29.6% (60% of median income).

Switzerland is one of several pioneering countries in the world to have developed and implemented a multi pillars pension system. Namely, it has opted for a three pillars system, consisting of a state pension system (first pillar), an

occupational pension provision (second pillar), and a private pension (third pillar). This concept of three pillars system was enshrined in 1972 in the federal Constitution after a popular vote, and its aim was to maintain an appropriate level of living for retire insured people, or in case of disability or death of insured people.

Among Swiss researchers, no unanimity can be found regarding old age poverty, rather a variety of figures prevails, ranging from as low as 3% to 16%, which leads logically to different policy positions. A previous study by Wanner & Gabadinho on the economic situation of the Swiss population found that in 2008 retired pensioners were financially secure, with only 6.6% of them living in poverty, and didn't include old age people in the priority group of poverty averting policy. Which position is reflected by the Swiss government old age policy.

Even though there is no debate about the overall success of the Swiss three pillars model, the higher level of old age poverty (in international comparison) brings to question the adequacy of the Swiss model. An exploratory study was carried on the Swiss Households Panel (SHP) data to determine the effectiveness of the pension system in reducing old age poverty, and to measure the contribution of each pillar to the pension system. The SHP is a longitudinal database on Swiss population panel, created in 1999 it counted 10,575 individuals living in 4,467 households in 2013. A sub-sample was defined by selecting old people aged over 64 for women and 65 for men. A quantitative analysis was done through descriptive statistics, simple graphics analysis and linear regression.

Main findings of the research exposed a poverty level of 28.4% at 50% median income and a level of 8.3% at the absolute poverty threshold defined by the Swiss Federal Statistical Office. The first pillar contributed for 62% to the income of old people, while the rate of the second pillar was of 26%. Possible policy recommendations could be to expand the quasi universal first pillar, in

order to better protect the population with low second pillar or no second pillar at all. Low wage, part time workers and women would be primarily concerned.

Key words: three pillars system, OASI, occupational pension, individual pension, old age poverty, Switzerland

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Contents

Abstract	i
Contents	iv
List of tables	vi
List of figures	vii
List of abbreviations	vii
1. Introduction.....	1
1.1. Introduction.....	1
1.2. Problem statement	2
1.3. Purpose of the study.....	3
1.4. Research questions.....	4
2. The Swiss three pillar system	6
2.1. Concept.....	6
2.2. Background.....	9
2.3. Key dates	11
2.4. Old Age and Survivors Insurance (AHV/AVS)	13
2.5. Disability Insurance (IV/AI).....	18
2.6. Supplementary benefits to OASDI (EL/PC).....	22
2.7. Income Replacement Allowances in event of compulsory service or of maternity (EO/APG)	25
2.8. Occupational Pension Plan - Retirement, Survivors and Disability (BVG/LPP)	28
2.9. Private pension.....	36
3. Methodology.....	39
3.1. Swiss Household Panel (SHP).....	40
3.2. Sampling and validation	41
3.2.1. Selection	41
3.2.2. Validation	42
3.3. Data analysis.....	49
4. Research findings.....	51
4.1. Definitions of poverty.....	51

4.2.	Level of poverty.....	53
4.2.1.	Poverty rate of households.....	53
4.2.2.	Poverty rate of individuals.....	59
4.3.	Income structure	65
4.3.1.	Income disparities.....	67
4.3.2.	Low income structure	70
4.4.	Factors influencing each pillar benefits	72
4.4.1.	Results	75
4.4.2.	Growing inequality	79
5.	Conclusion	81
5.1.	Summary of findings	81
5.2.	Research implications	82
5.2.1.	Recommendations.....	82
5.2.2.	Contributions to Korea	83
5.3.	Limitations of the study	84
	References	87
	Abstract (Korean)	93

This study has been realized using the data collected by the Swiss Household Panel (SHP), which is based at the Swiss Centre of Expertise in the Social Sciences FORS. The project is financed by the Swiss National science Foundation.

List of tables

Table 2-1	1 st pillar contributions (in wage percent)	13
Table 2-2	AHV/AVS benefits (in percent of single pension)	17
Table 2-3	Beneficiary of pensions (in % of single pension)	21
Table 2-4	Other beneficiary of pensions (in % of single pension)	21
Table 2-5	Old age capital contributions rate	31
Table 3-1	Socio-demographic characteristics of participants, sample 1	43
Table 3-2	Central tendencies of households, sample 1	44
Table 3-3	Central tendencies of households, sample 2	45
Table 3-4	Socio-demographic characteristics of participants, sample 2	46
Table 3-5	List of variables	46
Table 4-1	SKOS absolute minimum levels	52
Table 4-2	Levels of poverty according to households type	53
Table 4-3	Households poverty, sample 1	55
Table 4-4	Characteristics of sample 2 (households)	57
Table 4-5	Households poverty, sample 2	58
Table 4-6	Characteristics of sample 2 (individuals)	59
Table 4-7	Persons poverty based on total income	61
Table 4-8	Persons poverty based on 1 st pillar	62
Table 4-9	Persons poverty based on 1+2 pillars	63
Table 4-10	Persons poverty based on 1+2+3 pillars	64
Table 4-11	Income structure	66
Table 4-12	Income quintiles	68
Table 4-13	Linear regressions	76
Table 4-14	EL/PC recipients compared to millionaire	79
Table 4-15	Frequency of health insurance subvention	80

List of figures

Figure 2-1	Swiss three pillar concept	8
Figure 2-2	Pension benefits in percent of salary	9
Figure 4-1	Households poverty, sample 1	55
Figure 4-2	Households poverty, sample 2.....	58
Figure 4-3	Persons poverty based on total income.....	61
Figure 4-4	Persons poverty based on 1 st pillar	62
Figure 4-5	Persons poverty based on 1+2 pillars	63
Figure 4-6	Persons poverty based on 1+2+3 pillars	64
Figure 4-7	Income quintiles in CHF.....	69
Figure 4-8	Income quintiles in percentage	69
Figure 4-9	Median income structure of poor people	70
Figure 4-10	Mean income of low earners	71
Figure 4-11	Mean income structure of the total sample.....	72
Figure 4-12	Structural model of influencing factors on the pension system..	75

List of abbreviations

Depending on the language of the document, you may encounter abbreviation in one or another language, therefore I give here abbreviation in German/French.

AHV/AVS	Old Age and Survivors Insurance
BVG/LPP	Occupational Pension Plan (Retirement, Survivors and Disability)
EL/PC	Supplementary benefits on OASI or IV/AI
EO/APG	Income Replacement Allowances
FZG/LFLP	free transfer in Occupational Pensions Plan
IV/AI	Disability Insurance
UVG/LAA	Accident Insurance

1. Introduction

1.1. Introduction

Old age pension is one of the main domains dealt by the Welfare State. The general goal of pension systems is to ensure an income after retirement, possibly preserving living standards acquired before retirement, within the overall objective of poverty reduction in old age. Pension systems mainly provide cash benefits, and also distribute in kind benefits, e.g. auxiliary means to help mobility.

With the socio-demographic change occurring in developed nations, or more specifically the ageing population, the sustainability of pension systems has become a main concern for any Welfare State, extending to social and political controversial debates. In this context, the World Bank (1994) in a frequently cited report titled “Averting the Old Age Crisis” has promoted a three pillar pension system. The World Bank cited the Netherlands and Switzerland as successful examples. The Confederation (Swiss government) is satisfied with its three pillar system and the related old age policy. The federal council finds it quite effective in averting old age poverty (Wanner, 2008). Certainly, efforts have to be kept in reducing the number of old people living below the poverty line. However unlike active people or young people, old age is not included in the anti-poverty priority group defined by the government (Wanner & Gabadinho, 2008).

Switzerland was one of several pioneering countries in the world to have developed and implemented a multi-pillar pension system. It has opted for a three pillar system, namely the state pension system (first pillar), an occupational pension provision (second pillar), and a private pension (third pillar). This concept of three pillar system was enshrined in 1972 in the federal Constitution after a popular vote, and its aim is to maintain an appropriate level of living standards for retired insured people, or in case of disability or death of insured

people. The Constitution Article 34 quater starts as follow, “The Confederation¹ shall take measures to promote an adequate pension for old age, death and disability. This provision results of a federal insurance, occupational pension and individual pension” (Federal Chancellery, n.d.). In the same Article, the objective of each pillar was specifically described, namely the AVH/AVS “must provide sufficient pensions to cover basic living expenses adequately”. The occupational pension provisions added to the first pillar benefits shall “enable the elderly, survivors and disabled to maintain properly their previous standard of living.” The objective of the third pillar is less clearly formulated, but it is stipulated that “the Confederation in collaboration with the cantons shall encourage private pension schemes.”

The Federal Social Insurance Office (FSIO), and the State Secretariat for Economic Affairs (Federal Social Insurance Office, 2011) explains that the state pension system of Old Age and Survivors’ Insurance (AHV/AVS) had already been introduced in 1948, and before 1972 had been amended several times. The BGV/LPP occupational pension provision was generalized and made compulsory only in 1985 for all employees with a yearly earning reaching a defined threshold. The private pension was introduced one year later, it is not a defined plan, since it is a voluntarily personal and individual provision, but financial or life insurance products are supported through limited tax incentives, although tax deductions are limited and restricted to people with occupational earnings.

1.2. Problem statement

There is an apparent contradiction: On the one side, the three pillar pension system as developed in Switzerland is presented worldwide as a model (Leimgruber, 2008); the Swiss government seems to be satisfied, although it acknowledges some adaptations are needed. On the other side, in international

¹ Federal government

comparison, in 2010 Switzerland was lagging behind with 21.8% of old age poverty, far above the OECD (2013, p.165) average of 12.8%, only three countries have a higher rate of old age poverty in 2010.

In response to the governmental position, the Swiss Seniors' Council (SSR/CSA) claimed that the financial situation of the elderly is not so rosy (Heimberg, 2008). With 15.4% of seniors (15.5% for active people) having an income lower than 60% of the median income, pockets of poverty remain and active measures are needed to reduce them. The first pillar has not reached its aim, and instead of expanding the second pillar² by increasing the number of insured people, the first pillar should be improved by raising the level of benefits. In this mixed pension system, the question is whether the first pillar should be expanded, as demanded by the SSR/CSA, or the second pillar as it is currently undertaken by the Swiss political establishment. The answer is surely more political than pension based.

Even if old age poverty is not of high priority for the Swiss central government, themes related to seniors citizens like health condition, financial sustainability of the old age pension scheme, Alzheimer or mental health, dignified life, euthanasia, etc. are nowadays recurring social topics and have been regularly covered by Swiss media, including old age poverty. The financial situation of those in old age is still worrying and is still a social issue, e.g. last year, in March was broadcasted on the French language national TV network a documentary on old age poverty and precarity (Ceppi, 2014).

1.3. Purpose of the study

To understand this apparent contradiction, an investigation on the Swiss three pillar system, how it has been designed, what are its components, how it is performing, how adequate it is in fighting or averting old age poverty, could

² During the first BVG/LPP revision, in 2005 the threshold to be insured was lowered in order to include more workers - and ultimately more people.

surely help to bring an answer. In that view, the proposed research will focus on the role played by the first and second pillars, where the intervention of the State is most obvious and visible. This study starts off with an introduction on the three pillar system in Switzerland, including a short politico-historical background. It will be followed by an explanation of the articulation, coordination between these three pillars. Finally, an in depth presentation of each element making up the three pillars will help to understand their respective roles and interconnections.

The objectives of this study are to explain the apparent contradiction between the praised Swiss three pillar system and the remaining high level of old age poverty after social transfer. It will begin by presenting and explaining the three pillar pension model developed by Switzerland. Secondly, it will examine the adequacy of each pillar, in other words how each pillar is designed and adequately performs in regard of the concept of the Swiss three pillar system. The focus will be on the first pillar, quasi universal public scheme, and the second pillar, a much regulated occupational pension provision. In that order, the Swiss Household Panel (SHP) has been selected to carry out an empirical study and analyse the economical situation of old people and the composition of their retirement earnings. The SHP data has been chosen for easiness of access and the variables mentioned in the data description, the 1st and 2nd pillar were with certainty available in the data.

1.4. Research questions

Based on the objectives of the research, the current study aims to answer the following questions:

Research question 1

What is the three pillar pension system of Switzerland?

Research question 2

How does the pension system prevent old age poverty?

Research question 3

How does each pillar contribute to the total income of old people?

Research question 4

What are the significant factors affecting the proportion of benefits from each pillar?

2. The Swiss three pillar system

2.1. Concept

The three pillar system is at the core of the Swiss social security. Today it would be impossible to imagine the social security in Switzerland without a three pillar system. It covers old-age, survivors' and disability pension. It also partially includes sickness and accident insurance. However, health insurance does not belong to the three pillar system (FSIO, 2011).

Valterio & Dumas (2011) explain that in Switzerland, the old age, survivors and disability pension is based on three pillars that complement each other. This concept was enshrined in 1972 in Article 34 quater of the Federal Constitution. A federal insurance, the AHV/IV - AVS/AI or first pillar, must cover adequately the basic needs. The second pillar, occupational pension plan, would enable insured people to maintain their previous standard of living to a certain extent. Finally, the third pillar, also called private pension, aims to improve standards of living through savings accumulation incentives. Among other measures, fiscal advantages, policy encouraging home ownership can be mentioned. The system is completed by disabled people rehabilitation promotion and support to undertaken efforts in favour of old age, survivors and disabled people.

The design of the three pillars was not the result of a completely new idea. With its inclusion in the Federal Constitution, the government's aim was to continue, by way of significant improvements, the development of the existing construction, namely the public, occupational and private pension schemes. "To achieve this goal, it was necessary, therefore, to define the characteristics of each pillar so that the government would not intervene beyond what is necessary, while ensuring that the proposed system effectively guarantees the degree of protection required" (Valterio & Dumas, 2011, sect. 2).

The three pillar system results in a search for balance between the various branches in order to reduce the risks inherent to each pillar. The coexistence of a pay as you go system (first pillar) and of capitalization (second pillar) offers a very strong combination, as the basis for capital formation essential to the economy. Furthermore, this concept allows an optimal risk distribution between the three pillars regarding respective financing methods, demographic evolution and inflation risks. Another strong point is the shared responsibility for pension plans between the state and private initiatives. Indeed, while the first pillar has obviously a central nature, the second pillar is based on the liability of various occupational pension funds, managed jointly by employers and employees. Finally, incentives to encourage private pension provision are of importance, particularly for people who are left out of the second pillar.

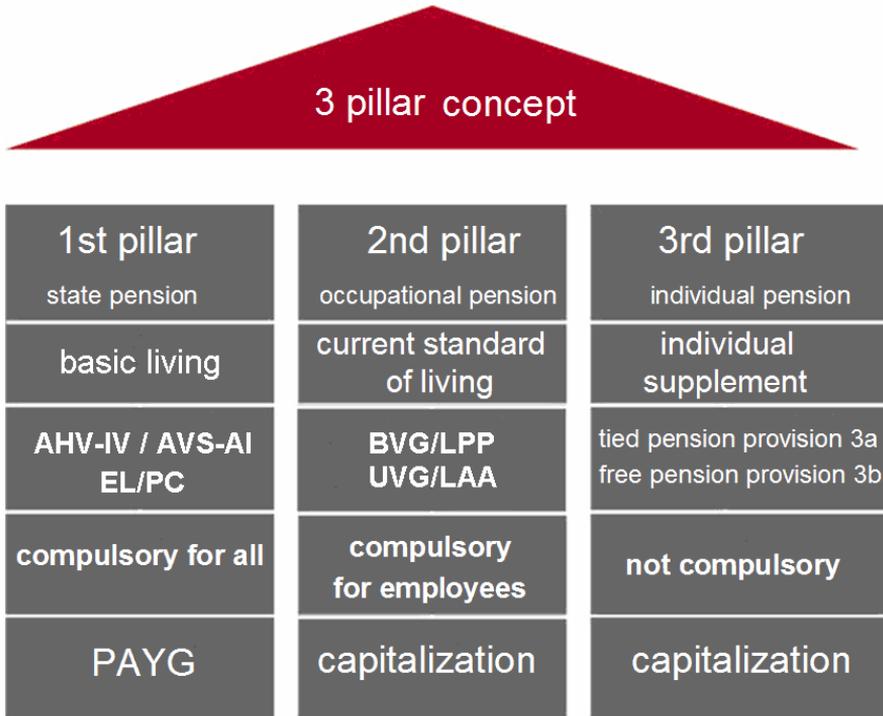
However the system is not free of weakness. Many people cannot access the occupational pension scheme and the variety of occupational pension funds ensued differences in (extra-mandatory) treatment, particularly in terms of benefits adaptation to cost of living inflation. Many problems of coordination remain and need to be solved.

The concept of the three pillar system has proved its validity and there is no need to fundamentally change its basis. Following the full scale revision of the 1999 Federal Constitution, it is not anymore the Article 34 quater, but the Article 111 which refers to the principle of the three pillars.

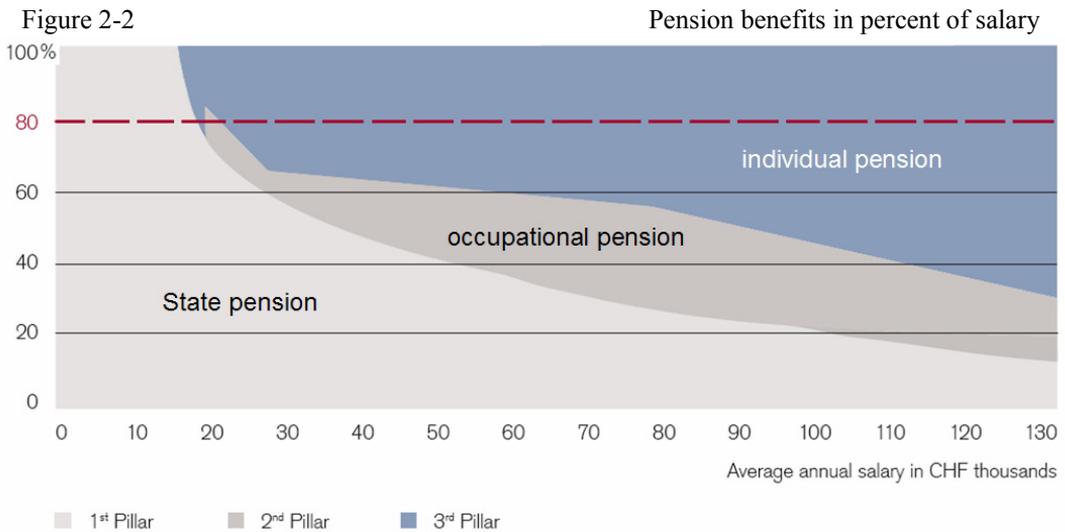
While for the federal administration (FSIO), the 2nd pillar consists only of BVG/LPP, most other actors of pension and insurances do also include the UVG/LAA. In contrast, while they omit EO/APG in the 1st pillar, the FSIO incorporates them. Therefore depending on the interlocutor, which social insurances constitute the three pillar system may differ.

Figure 2-1

Swiss three pillar concept



In case of retirement, first and second pillars should provide about 60% of the insured loan (BVG/LPP CHF 84,600 in 2015) to allow to maintain previous standards of living. To reach a level of 80%, which is considered as an optimum, seeing children education is over and the mortgage has been reimbursed, that missing part has to be supplemented by private savings.



Adapted from Credit Suisse (2009)

2.2. Background

Switzerland started early to develop social welfare insurance but was a latecomer as a welfare state (Armingeon & Beyeler, 2004). The development of social security in Switzerland was extremely slow; the decades preceding the Second World War are marked by a succession of failures of various proposed projects (Fragnière, 2011ba). Except the KUVG/LAMA (Law on sickness and accident insurance), which had been adopted in 1911, all important social insurance laws currently in force were passed after 1945. Actually, an ambitious KUVG/LAMA was proposed in 1900 but swept away by a popular referendum. A new LAMA/KUVG law, considerably reduced, entered into force in two stages: in 1914 for the health insurance and 1918 for the accident insurance (Degen, 2011).

Federal popular referendum and popular initiatives are the democratic tools in the hand of the Swiss population to veto a federal law or to demand a constitutional amendment. These two features of the Swiss direct or semi-direct democracy can explain policies in general, and still more the social policy development. If the initiative or referendum is successful, the Swiss population decides through national ballot. The large impact on the policy making often

leads to watered down compromises and delayed legislation after lengthy negotiations. The threat of launching a referendum is sufficient to put the government or the parliament under pressure (Fragnière, 2011b). Without direct democracy, Switzerland would have had by 1900 health and accident insurance, and by 1931 pension insurance. These social insurances, approved by the parliament, were later on rejected by the people (Armingeon, 2001, p. 156).

During World War II, the Federal Council provided income replacement allowances to drafted soldiers through a decree (the law is of 1952). This decree established the system of contributions levied on wages and set up decentralized compensation offices, which later became the model for the Old Age and Survivors Insurance (AHV/AVS), the AHV/AVS was decided in 1946 (Degen, 2011). The Disability Insurance (IV/AI) was introduced in 1960 and the complementary benefits to the AHV/IV – AVS/AI, and related needs for the poorest beneficiaries, were introduced in 1966.

Federalism and liberalism, which characterise the implementation and operation of Swiss social security, are perfectly illustrated by these two main social insurances of the first pillar (Fragnière, 2011b). Federalism can be understood as the Article 3 of the federal Constitution which states: “The Cantons are sovereign insofar as their sovereignty is not limited by the Federal Constitution, and as such they exercise all the rights that are not delegated to the federal law.” Social security is for a large part of the Confederation responsibility. The federal structure of the state influences decisively on the design of federal laws. Often the principles and general rules are defined, but the implementation is assigned to the cantons with broad competences (Obinger et al., 2005).

Although laws, principles and general rules are defined at the federal level, the implementation is assigned to the cantons, with broad competences, municipalities or non governmental organizations. One noteworthy exception is social assistance, entirely decided by cantonal authorities, but many times local

authorities are devolved important responsibilities (Armingeon, 1997). Federalism can also be seen in the cantonal fiscal and social policies in the 26 cantons that make up Switzerland. The taxload cantonal difference between the lowest and the highest is more than twice as high. Some cantons have no cantonal welfare scheme, while some have set up to six schemes (Armingeon et al., 2004). Liberalism has considerable influence in general, as well as in social policy. Resistance to centralization is strong and is clearly visible at the organization's level. "The implementation of social insurance laws is almost always undertaken at lower administrative levels in various organizations, often private, of varying importance and carrying out their duties in variable territory" (Fragnière, 2011b, p.3).

With the popular initiative "For true old age pensions", in 1972 the principle of the three pillars is enshrined in the federal Constitution: the AHV/AVS, the mandatory occupational pension and the optional private pension. In 1985 the BVG/LPP (Occupational Pensions) which is essential to the implementation of this constitutional article, entered into force. (Degen, 2011). One year later, in 1986, the three pillar system was complete with the introduction of tax-deductible savings.

2.3. Key dates

- 1890 Federal Constitution: the integration of art. 34a in the federal constitution is the first step in the evolution of occupational pensions to the level of the Confederation. The federal government is responsible for developing a health insurance and accidents.
- 1948 The federal law on Old Age and Survivors Insurance (AHV/AVS) entered into force after its acceptance by a large majority in a popular referendum of July 6, 1947.
- 1959 The federal law on Disability Insurance (IV/AI) entered into force.
- 1966 The federal law on Supplementary Benefits to Old Age, Survivors and Disability Pensions, (EL/PC) entered into force.

- 1972 The federal constitution revision of Art. 34 quater allows the system to include the **three pillars** in the federal constitution. Integrated in this system as a second pillar, the occupational pension is declared mandatory as a complement to the first pillar, the AHV-IV or AVS-AI.
- 1985 The federal law on Occupational Retirement, Survivors and Disability Pensions (BVG/LPP) entered into force. This legislation introduced a guaranteed minimum benefits, mandatory for employees.
- 1995 The federal law on free transfer in occupational Old Age, Survivors and Disability (FZG/LFLP) entered into force.
- 1997 The 10th revision of the AHV/AVS anchored in the law the notion of gender equality, provided transition from a couple-based system to an individual annuities (splitting) system and increases in stages the retirement age for women from 62 to 64 years.
- 2003 The federal Law on General Part of Social Insurance Law (ATSG/LPGA) entered into force. It aimed to coordinate the law in social insurances, to define concepts and set standards of uniform procedure in the different social insurances.
- 2004 The first revision of the BVG/LPP aimed to ensure transparency on the financial condition and management of pension funds and compliance by them of their communication obligations to the insured.
- 2005 2nd part of the first revision of the BVG/LPP resulted in harmonization of measures for men and women, in the introduction of a widower's pension and alignment of the timing of disability pensions on IV/AI. Simultaneously, remediation schemes to eliminate shortfalls were adopted by pension funds.
- 2006 3rd part of the first revision of the BVG/LPP introduced relevant tax rules for occupational pensions about occupational benefits insurance, the pensionable salary, and the purchase of additional benefits.

2.4. Old Age and Survivors Insurance (AHV/AVS)

The old-age and survivors insurance (AVS/AVH) covers the basic needs of life for loss of income due to old age of the insured person or the death of the person providing the support to the family (Federal Assembly, 2015a).

The AHV/AVS compensation fund offices (non governmental) are responsible for collecting mandatory contributions and paying old-age and survivors' insurance benefits (FSIO, 2011).

Insured person

Since the AHV/AVS is a quasi social universal insurance, anyone who is residing or works in Switzerland is subject to and covered by the AHV/AVS. Only diplomats and those who are already covered abroad are exempted.

Contributions

Anyone who is insured under the AHV/AVS scheme must pay contributions. There is no upper ceiling for the income considered for contribution, that feature of this social insurance, shows its solidarity since the AHV/AVS pension benefits are limited.

The AHV/AVS contributions are paid half by the employer and half by the employee. Contributions to the IV/AI and EO/APG are seen at the same time as contributions to the AHV/AVS. They reach 10.3% of salary (no ceiling), or 5.15% for each party (Federal Social Insurance Office, 2015).

Table 2-1 1st pillar contributions (in wage percent)

	Employer cont.	Employee cont.	Total
AHV/AVS	4.20%	4.20%	8.4%
IV/AI	0.70%	0.70%	1.4%
EO/APG	0.25%	0.25%	0.5%
Total	5.15%	5.15%	10.3%

In the case of self-employed people, AHV/AVS contributions are calculated by applying a rate of 7.8%. If the annual income is lower than CHF 56,400, a sliding rate is used to reach a 4.2% contribution rate.

When individuals are not gainfully employed, the AHV/AVS contributions will be established according to their assets, at twenty times the income received in the form of pension or benefit. Married people or civil partners will have their contributions calculated based on half of the total assets and benefits of both people. In principle, the cantonal tax assessment is the basis for the calculation of the AHV/AVS contributions. That annual contribution varies between CHF 480 and CHF 24,000, and the individual social assets vary from CHF 300,000 to CHF 8,400,000, respectively.

Beginning and end of compulsory insurance

While individuals in gainful employment have to pay AHV/AVS contributions from 1st January of the year following their 17th birthday, until they reach the AHV/AVS retirement age, those who are not in gainful employment will have to pay their contributions three years later, that is to say from 1st January following their 20th birthday.

The mandatory contribution payment ceases when the insured person reaches the normal retirement age and stops to engage in gainful employment. For men, this age is 65 years and for women 64 years. Anyone working after reaching retirement age should continue paying contributions to the AHV-IV-EO or AVS-AI-APG. However, no contribution is due if income does not exceed 16,800 francs (or 1,400 francs per month).

Minimal wage

In principle, insured person shall pay AHV/AVS contributions for any income, however small it may be. One exception, yearly income lower than CHF 2,300 (negligible income) is not subject to insurance contributions, unless they are specifically requested by the insured person.

Income exempted from contribution

Even people with no gainful employment must pay AHV/AVS contributions. Yet they are free from that duty if their contributing spouse or

civil partner pays at least double the yearly minimum AHV/AVS contribution (2 x 480 = 960 CHF for 2015).

No contributions are due on the military pay, on the provision of insurance in case of accident, sickness, disability, or on assistance benefits, family allowances, scholarships and benefits pension plans, nor on social benefits in the event of termination due to business closure, merger or reorganization, provided they do not exceed twice the maximum annual pension of old age. In contrast, AHV/AVS contributions are due on daily allowances of disability insurance and military insurance, benefits from unemployment insurance, maternity allowances and income replacement and the wage paid by the employer in case of sickness or maternity leave.

Benefits

Most of the benefits paid under the AHV/AVS insurance are adjusted to inflation and salary increases.

- retirement pension (including, where appropriate, child's pension)
- crippled allowance
- auxiliary means
- survivor's pension (widow, widower or orphan)

People who have reached retirement age receive a regular retirement pension. This age is currently 65 years for men and 64 for women.

The calculation of the ordinary pension reflects years of contributions:

- income from gainful employment or
- bonuses for education and for care of dependent person

A full term contributions entail payment of a full pension by the AHV/AVS. There are full time (44 years: pension scale 44) when contributions have been paid since 1st January after the age of 20 until the entitlement to a pension. If the contribution period is not fully completed, the pension will be reduced: each missing year of contributions will be equivalent to a reduction of 1/44.

Insured people who have children are credited for child-raising period. Those who took care of direct relatives or brotherhood can also be credited of bonuses for caring assistance. Revenues of the spouse during the years of marriage are divided in half, one half is attributed to each spouses (splitting).

The amount of the pension also depends on the average annual income, which is calculated using the earning announcements made to AHV/AVS compensation funds during active life.

The total income is then increased by a factor of revaluation calculated according to the entry year into the insurance taking into account changes in prices and wages. This amount of re-evaluated income is divided by the number of determining years and month. The result is the average annual income. This result, together with the contribution period, defines the level of pension.

A special scale of pensions applies based on total years of contributions. The more years of contribution, the higher the pension will be. From 1st January 2015, the minimum old age pension amounts to 1,175francs, the maximum pension to 2,350 francs.

In case of divorce

In divorce cases, the same principles are applied as for married persons: income during the years of marriage is credited for half to each spouse.

Early retirement

Flexible retirement is possible since 1997. Payment of the pension can be anticipated or deferred. If a person accepts a reduction of 6.8% per year in advance, the pension for old age can be claimed 1 to 2 years before normal retirement age. The deferment of the annuity, up to 5 years leads to an increased pension.

Survivor's pension

In case of death of an insured person before the age of retirement is reached, survivor benefits are paid to the surviving spouse or registered partner

and children. The widow or widower - or civil partner - is entitled to a pension as long as they have a child under 18.

A divorced person is considered widow or widower:

- if she/he has one or more children and the marriage dissolved by divorce lasted at least 10 years
- if the marriage lasted at least 10 years and the divorce came after the age of 45 years
- if she/he has reached the age of 45 years and the youngest child has not reached 18.

Widows without children are entitled to a pension, provided they are 45 old and have been married for at least 5 years.

The orphan’s pensions are paid until age 18. For orphans on education, the period of payment can be extended up to maximum 25 years in case of studies or apprenticeship.

Table 2-2 AHV/AVS benefits (in percent of single pension)

Pension for single person	100%
Total of combined pensions for couple	at the most 150% of max. single pension
Pension per additional child	40%
Widower pension (if child until 18 years)	80%
Widow pension (child or without child, 45 years old and married for 5 years)	80%
Single orphan pension	40%
Double orphan pension	max. 60%

Adapted from Basler Versicherungen (2011)

Helplessness allowances

The aim of helplessness allowances is to cover some specific types of care. They are paid to AHV/AVS beneficiaries who have their legal residence in Switzerland and on the following conditions:

- severe, moderate or light the helplessness and

- the helplessness has lasted without interruption for at least one year.

The benefits are adjusted to the degree of helplessness:

- severe: 940 CHF/month (80 % minimum AHV/AVS pension)
- moderate: 588 CHF/month (50 % minimum AHV/AVS pension)
- low: 235 CHF/month (20 % minimum AHV/AVS pension).

Old age pensioners with a slight helplessness and residing in a care home benefit no helplessness allowances.

Material support

Physical disabilities sometimes impede retired people, certain equipment such as hearing aids or wheelchairs can help their daily life. Old-age pensioners living in Switzerland can benefit subsidies from the AHV/AVS for a range of equipment.

2.5. Disability Insurance (IV/AI)

Disability insurance is closely linked to the AHV/AVS scheme. The contributions of AI/IV are seen at the same time as those of AHV/AVS and benefits are also paid by the compensation funds, their organizations is very similar (Mobiliar Versicherungen, 2011).

Disability insurance is mandatory in the same way as the AHV/AVS, as its aim is to prevent, to reduce, to eliminate economical effects of disability by providing rehabilitation measures. The provision of rehabilitation measures and cash benefits are aimed to cover the basic needs of disable people.

What is known in the U.S.A. as OASDI is called AHV/IV in German or AVS/AI in French.

Disability

For gainfully employed people, disability insurance defines disability not through medical examination but through economical assessment. It is the incapacity to earn an income, or only partially and consequently the level of loss of work earning. For insured people without gainful employment, disability will

be defined as the inability to carry out daily life tasks due to a physical, psychological or mental impairment (Federal Assembly, 2015b).

The disability must be definitive, the situation of the insured person has lasted over a year, and no improvement is reasonably expected.

Insured person

In the same way as for the AVS/AVH, anybody living or working in Switzerland is subject to the AI/IV.

Contributions

Same rule as to the AHV/AVS are applied to calculate the IV/AI contributions. For workers, both the employee and the employer pay the same contribution equivalent to 0.7 % of the AHV/AVS insured wage (no upper limit). Self-employed people pay for employee and employer shares or a contribution amounting to 1.4 % of their AHV/AVS declared income (no upper limit). Individuals without gainful employment will pay annual contributions between CHF 5.77 and CHF 288.66 (for 2015) depending on their assets.

Benefits

IV/AI benefits consist of:

- early intervention measures
- rehabilitation measures
- disability pension
- children pensions
- helplessness allowance

Rehabilitation before a pension

The main aim of the disability insurance is to promote the rehabilitation and socio-professional reintegration of the disabled people, in so far as their basic needs are fully or partially covered, as well as to insure their autonomy as much as possible. The first and foremost benefit of the AI/IV is rehabilitation measures, with the objective to improve or maintain the insured person's ability

to financially self support. The disabled person should carry on her gainful employment or carry out daily life tasks as long as possible.

When rehabilitation measures have been provided, and they are unsuccessful or only partially successful, a disability pension will be paid out. Disabled people who need help from a third party are entitled to a helplessness allowances.

Early intervention measures

The purpose of these measures is to keep the insured people in their current job. For that, early detection and early intervention are aimed to swiftly identify anyone who has stopped working and is at risk of disability. And to intervene swiftly to either allow the insured person to remain in the current position or to integrate a new workplace. Further health deterioration of the insured person can be prevented with swift intervention.

Rehabilitation measures

The aim of rehabilitation measures are to improve and maintain insured person's ability to financially self support, or their capacity in carrying out daily life tasks.

Beginning of disability pension

When rehabilitation measures are only partially successful, the insured person is entitled a disability pension. If the economical loss is of at least 40% (average) over an uninterrupted period of one year, and by the end of that period, the insured person continues to suffer, the insured person is entitled a disability pension.

An ordinary IV/AI pension is only granted to insured people who have paid IV/AI contributions for at least three full years before the occurrence of disability and are residing in Switzerland.

Degree of disability

For people in gainful employment, the degree of disability depends on the degree of income loss (as a percentage). The degree of disability is

determined after comparison of the individual's incomes, before and after the disability onset, and after completion of rehabilitation measures.

For people without gainful employment, the disability degree is assessed based on their capacity to carry out normal daily life activities.

Table 2-3 Beneficiary of pensions (in % of single pension)

Degree of disability in %	Pension
at least 40 %	quarter pension
at least 50 %	half pension
at least 60 %	three-quarter pension
at least 70 %	full pension.

Adapted from Basler Versicherungen (2011)

Calculation of the disability pension

IV/AI pensions are calculated similarly to the AHV/AVS scheme. Three factors are determinant to calculate the amount of the pension:

- number of years of contribution to the AI/IV,
- earned income,
- child education and care credits.

The degree of disability has to be applied to obtain the paid out IV/AI pension. The IV/AI pensions are identical to the AHV/AVS pensions, namely a full disability pension will vary from CHF 1,175 to CHF 2,350 per month. Disability pension of married couple or civil partners is capped to 150 % of the maximum AHV/AVS pension, or CHF 3,510 per month.

Table 2-4 Other beneficiary of pensions (in % of single pension)

Pension for single person	100%
Total of combined pensions for couple	at the most 150% of max. single pension
Pension per additional child (one invalid parent)	40%
Double pension per child (both parents are invalid)	60%

Adapted from Basler Versicherungen (2011)

Helplessness allowances

It follows the same principle as in the AHV/AVS insurance, however the level of benefits differ. The benefits are adjusted to the degree of helplessness:

- severe: 1,880 CHF/month (80 % maximum AHV/AVS pension)
- moderate: 1,175 CHF/month (50 % maximum AHV/AVS pension)
- low: 470 CHF/month (20 % maximum AHV/AVS pension).

2.6. Supplementary benefits to OASDI (EL/PC)

Supplementary benefits (EL/PC) are based on the general notion of covering vital needs: they provide to beneficiaries social basic living. They were introduced in 1965, initially as temporary measure to cover vital needs in addition to AHV-IV / AVS-AI pensions (Bonoli, 2000). Supplementary benefits are calculated based on individual needs (Federal Assembly, 2015c).

Insured person

People who have their domicile and habitually reside in Switzerland are entitled to supplementary benefits inasmuch they are at least 18 years old. Foreign nationals must have resided in Switzerland without interruption during the ten years immediately preceding the application date. For refugees the waiting period is five years. There are several cumulative conditions entitling to EL/PC:

- to be recipient of an AVH/AVS or IV/AI benefit
 - ◆ AHV/AVS retirement or survivor pension, or
 - ◆ AI/IV pension or daily allowance (for at least six months), or
 - ◆ recipients of AI/IV helplessness allowance from age 18; whose pension, daily allowance or helplessness allowance does not fully cover the basic needs.
- to reside and live in Switzerland
- to be Swiss national
 - ◆ or EU foreign national
 - ◆ or having been living for 10 years without interruption in Switzerland
- living expenses exceed relevant income

Contributions

The supplementary benefits are not funded by payroll deduction, but are fully funded by the state budget. While cash benefits are supported for 5/8 by the Confederation and 3/8 by the cantons, in kind benefits are solely funded by the cantons.

Since the cantons are responsible for the implementation and part of its funding, many cantons have promulgated cantonal Supplementary benefits law. It allows the cantons to adapt to local conditions, the provisions to cover vital needs of people facing precarious living. It is to be stressed that in Switzerland, public assistance is the responsibility of the cantons and generally implemented by municipalities (Armingeon et al., 2004).

Benefits

There are two types of benefits:

- cash benefits, paid monthly
- benefits in kind, reimbursement of costs of illness and disability.

The pension amount is determined individually after comparing disposable resources and expenses to cover.

Calculation of cash benefits

Expenses

Besides some effectives expenses like expenses to earn a salary, or the AVH/AVS contributions, yearly expenses recognized for people living at home are as follow:

- CHF 19,290 for singles
- CHF 28,935 for couples
- CHF 10,080 for each of the first two children
- CHF 6,720 for each of the two following children
- CHF 3,360 for each additional child

The annual rent for an apartment and associated costs is also accepted up to:

- CHF 13'200.00 for people living alone

- CHF 15'000.00 for couples, or people with children

For people living in nursing home or at hospital, an additional amount is added.

Earnings

Article 11 of Supplementary benefits Act lists the relevant earnings to determine the Supplementary benefits, i.e. gainful employment, AHV/AVS - AI/IV pension or AI/IV daily allowance, as well as family allowances and alimonies received.

Assets are also taken into account as an earning. The estimated earning will depend on the type of the assets and the status of the insured person.

Benefits in kind

Health and disability costs

As long as health and disability expenses are not already covered by another social insurance, they can be reimbursed. However they must be mentioned on the list specified in Art. 14 of Supplementary benefits Act, and they are capped accordingly to the beneficiary status:

- CHF 25,000 - for singles
- CHF 50,000 - for couples
- CHF 10,000 - for double orphans
- CHF 6'000 - for home care residents.

Benefits adaptation to inflation

Generally, the Federal Council will review every two years the amount of recognized expenses and determining income, and adapt them as needed. Thereafter, the amount of supplementary benefits granted can be adjusted upward or downward.

Difference between additional services and assistance social

Social assistance is also used to cover basic needs, but it is intended primarily for people who are not beneficiaries of AHV/AVS - AI/IV pension or AI/IV daily allowance, and thus are not entitled to supplementary benefits. In

case of significant improvement in the situation of a recipient of social assistance in terms of income or wealth, cash assistance received must be paid back. However, once paid out supplementary benefits shall in no case be reimbursed

2.7. Income Replacement Allowances in event of compulsory service or of maternity (EO/APG)

This insurance scheme aims to compensate for the loss of income due to military service or maternity. The EO/APG are not so important as such, but they were first set in place and served later as organizational and implementation model for the AHV/AVS and IV/AI insurance schemes (Leimgruber, 2008).

Insured person

Like the disability insurance, the EO/ APG are closely related to the AHV/ AVS. They cover the entire population living in Switzerland (country foreign nationals included), regardless of whether or not a person will be in a position of military, civil protection or civil service in Switzerland or will have the opportunity to claim her right to a maternity allowance.

Compulsory service

People are entitled to allowances for loss of income when they:

- do the service in the Swiss army or in the service of the Red Cross, for each day of pay
- perform civilian service instead of military service, for each day of service taken into account
- serve in civil protection, for each day of pay
- participate in federal and cantonal training for monitors Youth and Sport, for each day of class
- participate in training for instructors of young shooters, for each day of class giving right to function pay

Maternity

In principle, all women who work and earn a salary are entitled to maternity allowance. In fact, they must meet the following conditions:

- have been compulsorily insured under the AVS/AHV law during the nine months preceding delivery. Insurance periods completed in a country of the EU or EFTA are included without restriction.
- have, during this period, been gainfully employed for 5 months at least, regardless of occupancy;
- at the date of delivery, to have a valid work contract, be self-employed or have a work in the business or farm of their husbands against a pay in cash (it is not necessary, however, they return to work after maternity leave).
- women who are neither employed nor self employed also meets the conditions when they receive daily allowances from Unemployment Insurance, or Health Insurance those are paid due to a previous gainful employment. Conditions are also met for women who are entitled to daily allowances and do not exercise this right.

Employees who do not meet the conditions of entitlement to a maternity allowance continue to be entitled, after giving birth to the continuation payment of wages by the employer in compliance with the Code of Obligations.

Beginning and end of compulsory insurance

As for the AHV/IV - AVS/AI, all persons gainfully employed must contribute to the EO/APG. However there is one exception: youth gainfully employed do not pay dues until the end of the year they reach 17 years. Family members who work in the family farm and do not receive wages in cash don't need to pay EO/APG contributions until December 31st following their 20th birthday.

The obligation to pay contributions ends when the person has reached the normal retirement age and has ceased to engage in gainful employment. Those who continue working after reaching retirement age should continue to

pay AVS/AI/APG (AHV/IV/EO) contributions, but only for the part of their annual income that exceeds 16,800 francs.

People without a gainful employment have to pay contributions starting from January 1st of the year following when they reached the age of 20. The obligation to pay lasts until the end of the month in which they have reached retirement age. Anyone who receives a disability pension from the IV/AI must also pay EO/APG contributions

Contributions

Employed individuals pay jointly with their employer a contribution of 0.25% on the AHV/AVS loan. Self-employed may benefit of lower rate according to the income scale applicable to that category by the AHV/AVS insurance.

People without income pay a contribution (between CHF 23 and 500) based on their social assets

Benefits

Allowances in the event of service

Those who are serving in the Swiss army, in the Red Cross, or fulfilling a civil defence service or civil service are granted:

- basic allowance which amounts to 80% of the average income (between CHF 62 and 196 per day)
- child allowance is CHF 20/day for each child under 18, 25 in case of education or apprenticeship
- childcare allowance up to actual costs, however limited to CHF 67/day under proven conditions
- business allowance of CHF 67/day to people who are in charge of business (company owners, farmers etc.)

Allowances in the event of maternity

Only women who are employed and incapable of working or unemployed and receive a daily allowance are granted a maternity allowance of 80% of the average earned income. That allowance is capped to CHF 196 per day.

Entitlement to a maternity allowance lasts 14 weeks (98 days). It can end earlier if the mother returns to a gainful employment or in case of death. In case of a longer child hospitalization, a deferment is possible. Application for maternity allowance must be addressed to the relevant AHV/AVS office.

2.8. *Occupational Pension Plan - Retirement, Survivors and Disability (BVG/LPP)*

Occupational pension scheme aims to enable old age people, survivors and disabled to maintain their standard of living, in addition to the AHV/AVS pension (AXA Winterthur, 2011).

The following description concerns minimum guaranteed benefits described by the Occupational Pension Act, sometimes called shadow plan. Pension plan institutions are free to grant more generous benefits to insured people, similar or different regulations might apply and would add complexity in the presentation. For example the savings of an insured person could be composed of a mandatory part and an above-mandatory part. The minimum 1.75% interest rate (in 2015) applies to the mandatory part, but nothing is prescribed for the above-mandatory part.

Insured Person

There is no compulsory insurance for wages below a specified minimum annual income (threshold access). This minimum income is periodically reviewed by the Federal Council (government), for 2015, it amounted to 21,150 francs/year (Federal Assembly, 2015d).

The share of wage that must be compulsorily insured are those that are located between 24,675 francs³ and 84,600⁴ francs (upper limit of annual salary). For earnings exceeding 21,150 francs, but below the coordination deduction or slightly ahead of it (in fact, for wages ranging from 21,150 to 28,200 francs), the insured salary, also known as “coordinated salary” amounts to 3,525 francs.

The Occupational Pension Act (BVG/LPP) prescribes minimum benefits. This is why companies often opt for solutions that are more generous, which are applied by the pension funds. It is therefore quite possible that the minimum annual salary of reference (level of access) is reduced or eliminated and that the ceiling be raised. It follows that some people in low income also have a second pillar.

Individuals voluntarily insured

Self-employed and employees working for an employer not submitted to the mandatory AHV/AVS can also be insured if they decide so.

Voluntary contributions can either be paid to:

- the Occupational pension fund of their professional association,
- the same Occupational pension fund insuring their employees or,
- the Substitute Occupational Benefit Institution

Both the employee’s and employer’s contributions have to be paid by the voluntarily insured person.

Trial period

A person must be ensured in accordance with the BVG/LPP if the working relationship lasts more than 3 months or if their duration is indefinite. Having agreed to a trial period does not relieve the obligation to ensure, even if the working contract is terminated during the probationary period.

³ This amount represent 7/8 of the max AHV/AVS pension.

⁴ Is equivalent to 3 times the max AHV/AVS pension.

Part-time employees

A person who works part-time must be ensured in accordance with the BVG/LPP if annual income exceeds the minimum salary of reference (greater than 21,150 francs). If a person holds several part-time jobs with multiple employers, it is entitled to a pension as soon as his total income exceeds the minimum wage reference. Contributions will therefore be levied on different partial salaries.

Insurance in case of incapacity of work

Contributions to the pension fund are due as an employer is legally obliged to pay wages. The waiver of contributions often takes place after three months of disability, in other words, the contributions of the employer and the insured will be taken or credited by the pension fund.

Family members

Family members who provide services are remunerated under an obligation to pay contributions BVG/LPP when their wages exceed the minimum income of reference and should make contributions to the AHV/AVS. Exceptions are family members who collaborate with the status of independent.

Beginning and end of compulsory insurance

All employees who pay AHV/AVS contributions and with an annual salary exceeding CHF 21,150 from the same employer are subject to compulsory insurance against death and disability (risks) from 1st January following their 17th birthday, and to old-age insurance (savings) from 1st January following their 24th birthday. The compulsory BVG/LPP insured salary is capped.

The obligation to be insured and to pay contributions to the occupational pension fund stops when the insured person has reached retirement age, ceases to engage in gainful employment or receives a full disability pension. When the employment relationship is terminated, the insurance for risks of death and disability remains in effect one month after the end of the employment relationship (subsequent cover).

Contributions

Contributions to the old-age capital

The old-age capital is made through old-age credits. Contributions are graded according to the following table:

Table 2-5 Old age capital contributions rate

men / women	% of insured wage
25 to 34 years	7 %
35 to 44 years	10 %
45 to 54 years	15 %
55 to 65/64 years	18 %

Contributions for risks insurance

Disability and survivors pensions are financed on the principle of insurance. Contributions are calculated according to actuarial principles in effect for insurance. In general, one can start from the idea that the average contributions range from 3% to 4% of insured salary. Risk premiums for men are higher than those of women with certain companies.

Other contributions

These contributions fuel the guarantee fund that covers all Switzerland, which pays benefits when the employer can not pay contributions or when the pension fund becomes insolvent. This fund provides mandatory promised benefits and to a certain extent non-compulsory benefits.

Some pension funds levy special contributions to cover administrative costs. However, they are included in the premiums for insurance risk in most pension funds.

Contributions are charged for half to the workers and half to the employers, according to the following principle: the sum of employer contributions must be at least equal to the sum of contributions from workers.

Vested benefits

When leaving an occupational pension fund, and no insured risk occurred (old-age, death or disability), the insured person has right to a termination benefit or vested benefits. This case happens when the person changes of job or stopped to be employed and has not yet reached retirement age. The vested benefits (savings) will be transferred to the occupational pension institution of the new employer. When the leaving person has not new gainful employment, the termination benefit will be transferred to a blocked account (bank), or to a blocked insurance policy. If the leaving person fails to provide the occupational pension institution with the contact information of the new occupational pension fund, the vested benefits have to be transferred to the Substitute Occupational Benefit Institution within two years after the person left his/her employment.

The law on the free transfer (FZG/LFLP) defines in detail the calculation of vested benefits. Since all the pension funds are not made on the same basis, sometimes difficulties arise when calculating the vested benefits. This includes, at least, all savings contributions of the insured person and employer, interests (during the insured time by the occupational pension fund, the minimum rate in 2015 is 1.75%), and any vested benefits or redemptions made

Contributions to stabilization measures meeting the legal requirements can be subtracted. The situation is more complicated in the case of pension plan institutions which apply the principle of defined benefits. These institutions promise benefits as a percentage of insured salary.

Benefits

There are three types of insured benefits:

- an old-age pension upon reaching legal retirement age, i.e. 64 for women and 65 for men. The retired person can opt to receive one quarter of the BVG/LPP retirement assets as a lump sum. In that case, the written consent of the spouse (civil partner) is required.

- a disability pension if the disability degree is at least 40 % (IV/AI criteria) for those who were insured at the time they became unable to work due to that disability. The pension level depends on the disability degree:
 - ◆ at least 70% - full pension
 - ◆ at least 60% - three-quarter pension
 - ◆ at least 50% - half pension
 - ◆ at least 40% - quarter pension

If the disability pension does not reach 10 % of the minimum AVH/ AVS old-age pension, a lump sum can be paid instead.

- a survivor pension provided that:
 - ◆ dependent children have to be taken care for, or
 - ◆ the survivor has reached age 45, and was married or in a civil partnership for at least five years

If none of these requirements are fulfilled, the surviving spouse will receive a three annual pension's lump sum payment.

The divorced spouse may claim a pension of widow/widower if:

- ◆ the marriage lasted for at least 10 years, and
- ◆ the deceased was obliged to pay alimony

Dissolved civil partnerships follow the same rules.

Should the survivor remarry or register a new civil partnership, any right to a survivor's pension would be forfeited.

In all three above mentioned cases, a child pension is added for each dependent child until the age of 18 years or 25 if in school or training.

Promotion of home ownership

In order to buy a home for their own use, individuals may use occupational benefits assets either as a pledge to their benefits or an advance withdrawal, of minimum CHF 20,000. In both cases, the written consent of the spouse or registered partner is required.

In order to finance their home as primary place of residence, or to pay back a related mortgage, insured persons may:

- pledge their rights to BVG/LPP benefits,
- pledge an amount up to their vested benefits,
- receive an advance payment, up to their vested benefits.

However, some restrictions apply for people over 50. In contrast to the pledge, after an advance withdrawal, all benefits are accordingly reduced. In the case of the pledge, only if it is redeemed, the benefits will be adapted.

If the BVG/LPP restricted home property is sold, in general the insured person must repay the advance amount to the occupational pension institution.

A tax is levied on advance payments, which would be reimbursed in the case of repayment to the institution.

Calculation of benefits

- **old-age pension:** accumulated assets at the time of retirement will be converted into an annual pension (annuitization). Currently the conversion rate is 6.8%
- **disability pension:** is calculated on projections since the disabled person has not yet reached retirement age. The accumulated capital (including interests) will be added with projected retirement credits for the remaining years. The projected old age assets are converted with a 6.8% rate into an annual disability pension.
- **widow/widower pension:** amounts to 60% of the full disability pension
- **child pension:** amounts to 20% of the full disability pension

The widow/widower pension or the orphan pension can be replaced by a lump sum if they don't amount to 6 % of the minimum AHV/AVS old age pension, 2% respectively.

In case of divorce

Accrued savings contributions during the time of marriage (or civil partnership) are divided and each has right to half of the pension savings. This operation is conducted for both spouses or partners.

Early retirement

There is no mandatory right to flexible retirement, however most occupational pension funds offer that possibility, including the Substitute Occupational Benefit Institution. What is defined in the BVG/LPP law is the number of anticipated or deferred years, precisely between the age of 58 and 70 for men, and 58 and 69 for women. Accordingly reduced or increased retirement pensions will be paid out.

Benefits in cash

Payment in cash of vested benefits is possible only if the insured person:

- leaves permanently Switzerland,
- begins self-employment,
- if the termination benefits are less than the contributions of one year.

Since June first 2007, the payment in cash of the mandatory part of the vested benefit is no longer possible when the insured person leaves Switzerland, but is necessarily insured in a member state of the EU or EFTA for the risks of old age, death and disability.

In order to receive the vested benefits paid in cash, written authorization of the spouse or registered partner is necessary. A tax is levied.

Implementation by the employer

Any employer who employs workers has obligation to ensure to create a pension plan fund or to join a collective or common pension fund. These institutions, most often managed by banks, insurance companies or professional associations, provide same or different insurance plans to various businesses

(Mackenzie, 2010). Workers and employers jointly decide the affiliation and configuration of insurance relations. The employer must obtain the consent of workers on the crucial points in the assurance relations.

Employees and employers have the right to appoint the same number of representatives in the highest body of the pension fund. The insured shall designate their representatives directly or through delegates. If this can not be done because of the structure of the pension plan institution, especially in collective institutions, the supervisory authority may accept another form of representation. The Presidency of the joint body is provided in turn by a representative of employees and an employer representative.

If an employer is not affiliated with any pension plan institution, it is required to join the Substitute Institution. This affiliation involves costs for the employer. The workers also are at disadvantage when such affiliation is forced, they are insured under the BVG/LPP minimum, protection is lower than that would be offered by an over-compulsory plan.

It is also to note that some big and mid-size companies run their own pension plan institution. The federal administration, cantons and some cities do also run their own pension plan institution. But in that case the requirements for the solvency of the pension fund are regulated by another law, a public law and not private law.

2.9. *Private pension*

Third pillar assets contribute significantly to the Swiss economy. In 1995, they represented about 4.8% of the second pillar assets, or about 5.8% of GDP (Börsch-Supan & Miegel, 2001, p.78). However no statistics on third pillar assets are available, only rough estimates.

Definition

The third pillar or private pension is a voluntary scheme meaning there is no obligation, only incentivizing measures from the government through fiscal

eases. In return strict rules, similar to the second pillar, are applied. That type of pension is called tied pension or pillar 3a. The other type of pension known as flexible pension or pillar 3b, is very similar to the first one, consisting also primarily, but not exclusively of banking or insurance products, which are this time only limited by the market conditions. Both pensions, tied and flexible pensions together compose the Swiss private pension. It came into force one year after the mandatory second pillar, in 1986 and aims to complement and cover gaps resulting from the first and second pillars and to ensure that everybody can maintain one's standard of live after retirement (Rohner, 2013).

Since the third pillar is a private pension, it is solely an individual decision on the type and level of pension. Contrary to the first and second pillar, there is no governmental intervention to set up minimal obligation; therefore the individual is alone when facing private actors of the market promoting their own products, to find a personalized solution to optimally cover her/his pension needs. Fiscal optimization does not always go along with optimal pension planning. The first argument put forward by private actors when promoting third pillar products is the tax advantage (only possible for pillar 3a), followed by family protection in case of death and non desired early retirement due to health condition or economical situation. The possible decrease of pension coming from the first or second pillar is also mentioned (AXA Winterthur, 2015).

Differences between tied and flexible pension

Many restrictions apply on bank accounts or life insurance policies forming the tied pension. The main ones are:

- restricted to gainfully employed persons
- annual payments limited up to⁵:
 - ◆ CHF 6,768 for people with occupational pension plan
 - ◆ CHF 33,840 or 20 % of their AHV income for people without occupational pension plan

⁵ These are the same limits which can be reported on the tax declaration

- withdrawal possible at the earliest five years prior to the regular AHV retirement age. Deferral is allowed up to five years past the regular AHV retirement age. Other cases are possible following the rules stated in the BVG/LPP to get vested benefits in cash.
- the order of beneficiaries in case of death are listed

On contrary any regular saving or life insurance product can be considered as belonging to flexible pension, in that case only market conditions resulting from private law apply.

Banks vs life insurance companies

The two main actors offering third pillar coverage are banks and life insurance companies. While the purpose of offered solutions is similar, that is a long-term approach to secure financial resources to maintain standard of living after retirement, their approach and conditions differ.

Life insurance products cover death and disability risks, and if should be the case capital or annuity will be paid. A defined retirement capital is stated at the signature of the contract. As for life insurance policies, each year a premium has to be paid, and difficulties may arise if the earnings/financial situation of the insured person change.

Banks offer more flexibility, there is no yearly payment obligation. The capital which will be paid at retirement is undefined, it will be composed of all payments added with interests.

Banks as well life insurance companies offer both types of third pillar, tied and flexible, but only in the case of pillar 3a, yearly payments made can be fully deducted from taxable income, and at time of retirement, the paid lump sum or capital, will be taxed separately with a preferred rate.

3. Methodology

In explaining the Swiss three pillar pension system, research question No. 1 has been answered in the previous chapter. The present chapter will cover the methodology applied to the panel data study and is organized as follows: 1. description of the selected panel data; 2. participants sampling and sample validation; 3. and lastly data analysis.

Residing population in Switzerland

In 2013, Switzerland counted 8,039,060 inhabitants, of whom 1,869,969 were foreign nationals or 23.3% (Federal Chancellery, 2014).

Households were mainly composed of single households (36.5%), couples without children (28.1%), couples with children (26.7%). These three types of households made up 91.3%. The rest consisted of single parent with children (5.6%) and other types of multi-person households (3.1%).

As main language German was spoken by 65.3% of the population, French by 22.4%, Italian by 8.4%, other languages by 20.9% (since multiple responses were possible the total exceeds 100%).

The FSO (2013) provides the following figures on the Swiss population on 31.12.2012 or 1.01.2013. Young non active counted 1,643,307 people, active population (age 20-64) counted 4,997,135 people, and old age counted 1,398,618 seniors or 17.4%. In 2012 life expectancy at age 65 was 19.1 years for men and 22.1 years for women (Guggisberg & Häni, 2014). Married couple was the first group with 4,520,871 people, followed by singles 3,507,132 and registered partners counted only 11,057 people. The FSO (2013) mentions, without providing further categories, that 6,785,610 people (84.4%) resided in cities, while 1,253,450 lived in the countryside.

3.1. *Swiss Household Panel (SHP)*

The goal of the Swiss Household Panel (SHP) is to observe and describe social changes inside the Swiss society, focusing in particular on changes in living conditions and depictions in resident population of Switzerland.

The yearly panel is composed of randomly selected Swiss private households from the Swisscom's electronic telephone directory, excluding people living in old age homes or nursing homes. All household members aged 14 and over, who are permanently residing in Switzerland, are interviewed through telephone, with the use of a computer assisted telephone interviewing software, and are followed over the years (Zimmermann et al., 2003). In order for the sample to be representative of the Swiss population (Swiss and foreign nationals), participants are recruited from the four different language regions, from each canton⁶, from various household categories, etc.

The SHP is a longitudinal database on the Swiss population, which is supported by the Swiss national science foundation. Various topics and approaches in social sciences are covered by the survey, such as income, expenses, well being, health condition, physical activities, and social connections. This SHP panel data, similarly to the Household Budget Survey (HBS) and Statistics on Income and Living Conditions (SILC), two other panel data bases on Swiss households, are including active and retired people, covering various aspects of households while the current study focuses on old age and old age income only.

Data was first collected in 1999 among a sample of 5,074 households representing 12,931 individuals (Fondation suisse pour la recherche en sciences sociales FORS, 2015). In 2004 a second sample of 2,538 households or 6,569 household members was added; and in 2013 a third sample of 4'093 households and 9'945 individuals was included. However, the codification of the third sample has not been finished yet and therefore their data couldn't be used for

⁶ The Swiss federal state is formed of 26 autonomous political regions called cantons.

this research. Consequently, this study exploited information extracted from the 1999 sample and the 2004 sample contained in the wave no 15. Information was collected through the months of September 2013 to February 2014 by FORS or under its supervision and was made available in the 15th wave of the SHP data. It counts 10,575 individuals living in 4,467 households, of whom 2,009 old age people (65+) were living in 1,417 households. They represent 19% of the sample, or 31.8% of the sample of active people, which is not too far from the Swiss dependency ratio of 28.1% (OECD, 2013, p.349).

3.2. *Sampling and validation*

3.2.1. Selection

Two data sets were used for the study, namely the household data and the individual data of the 15th wave. The selection has been processed as follows; first, retired individuals were selected to find corresponding households. Second, since the current study focuses on old age, households headed⁷ by a retired person were selected. They represented 1,312 households or 29.37% of the total. In other words 3,154 households (70.63%) were headed by an active person. People reaching retirement age in 2013 (65 for men and 64 for women) have not been selected. The reason is to have the same base (yearly income) in order to enable comparison, old age benefits must have been received during a complete year. A separate study on the transition year, from active to retired life, could have been possible if more detailed information had been available, e.g. salary with related period of time. Consequently, only seniors who were strictly aged over 65/64 have been selected.

A few households have been added for the following reasons:
- pensioner married to a younger spouse (non retired), and this active partner designated as the reference person counted for 106 cases, - household where the

⁷ By default the household head was considered to be the reference person, mentioned for the survey. The reference person is considered to know the household well and to be familiar with the household situation (Wernli et al., 1999).

head was not a senior, but whose old age pension was a significant economical contribution have also been included four times. Three households presenting the same configuration were at first added, but later on dismissed, because none of the retained elderly was receiving an AHV/AVS pension.

At this stage, the sample counted 2,383 people (family members), of whom 1,923 old (over 65/64) were residing in 1,424 households. However the size of the sub-sample will decrease after control of the validity and consistency of the available information.

3.2.2. Validation

From the 58 seniors with no AHV/AVS benefits, 35 have been taken out, while 23 remained in the sample. Criteria for the selection were, possibility to defer the public pension (up to 5 years), to be married in case of a low income, and women who were already retired in 1997, at the time the “splitting”⁸ introduced by the 10th revision of the AHV/AVS, became effective.

427 elderly declared absolutely no income (230 men and 197 women). However, they have not been directly excluded. Following criteria have been applied for their selection: age of the senior (possibility of deferring pension, or no “splitting” for women), nationality (a foreign national could have become established in Switzerland after retirement), being married, being a taxpayer (sign of capital, fortune). Thereafter, 157 men have been excluded, while 71 were kept. In the case of women, 147 were excluded, while 50 were still included in the study.

At this step, the sub-sample counted 1,582 elderly (681 men and 901 women) aged over 65/64. Corresponding families counted 2,040 people living in 1,214 households. However, only 1,154 households have declared an income,

⁸ The term splitting designates the sharing of earnings accumulated during the time spouses or registered partners were married. Earnings are allocated for half to each spouse when an insured case happens and both receive pension benefits. The splitting was introduced in 1997 with the 10th revision of the AHV/AVS.

thus another 60 households group had to be excluded. Ultimately the sample counted 1,154 households, 1,939 family members, 1,686 people aged over 65/64⁹.

This sub-sample was used for the first part of the study, and is called sample 1. In the first part, households or families are analyzed as units. This will provide an answer to the second research question, i.e. how does the pension system avert old age poverty.

Sample 1

Table 3-1 Socio-demographic characteristics of participants, sample 1

variable	category	frequency	percentage	mean	
gender	male	752	44.9%		
	female	924	55.1%		
	Total	1676	100%		
age	65/64 ~ 75	1107	66.1%	73.54	
	76 ~ 85	491	29.3%		
	86 ~ 95	77	4.6%		
	96+	1	0.1%		
	Total	1676	100%		
household	couple	with children	90	7.8%	
		without children	354	30.7%	
	living alone	male	633	54.9%	
		female	52	4.5%	
	single	but not living alone	25	2.2%	
	Total		1154	100%	
nationality	Swiss	1587	94.7%		
	foreign	89	5.3%		
	Total	1676	100%		

Source: Swiss Household Panel (SHP)

The total number of seniors living alone is 444 or 38.5%. The ratio of 1 to 4 between men and women reflects the higher life expectancy of women.

⁹ 30 women aged 64 were kept as family member, and their income were used in the households study.

Couples with 54.9% compose a little bit more than half of the sample. Couples with children represent less than 5%. These families included between one and three children, some are grown up while others were still dependent children. Lastly, “single senior not living alone” constitutes the smallest category with only 2.2%. Most of the time the senior was living in the same household as a family member, such as a brother, a sister, a daughter, a son, or a grand child.

Table 3-2 Central tendencies of households, sample 1

	men living alone	women living alone	couples without children	couples with children	single senior not living alone	total
frequency						
N	90	354	633	52	25	1154
%	7.8%	30.7%	54.9%	4.5%	2.2%	100%
total income (CHF)						
mean	64,973	46,671	94,313	176,177	91,883	81,047
median	62,400	39,065	80,000	135,200	76,800	66,000

Source: Swiss Household Panel (SHP)

Sample 2

The second part of the study focused on individuals, namely retired people receiving pension benefits. Therefore the sample needed a second screening, with stricter rules: each retired person had to receive a public pension (with a few exceptions, e.g. women who retired before the introduction of the “splitting”, or foreign national men who could have settled in Switzerland after reaching retirement age). The different parts making up the income had to be consistent, and the divergence between the calculated sum and the total declared income had to be lower than 5%. If one member of a couple had inconsistent income information, both members of the couple had been dismissed.

Table 3-3

Central tendencies of households, sample 2

	men living alone	women living alone	couples without children both retired	couples without children only one retired	total
frequency					
N	97	359	267	97	820
%	11.8%	43.9%	32.6%	11.8%	100%
total income (CHF)					
mean	64,939	46,529	103,736	106,912	74,477
median	60,000	38,400	88,800	95,297	59,749

Source: Swiss Household Panel (SHP)

During that second process of control and validation, numbers of partners (not married), which had been coded with the value 2, for married couples, became visible. As Wernli et al. (1999) explained, the SHP is interested in the various types of couples, cohabiting or married and regardless of sexual orientation, therefore those people should have been coded with the value 6. In theory, the effects for registered partners are the same as for a married couple, namely the AHV/AVS pension is capped at the 150% threshold of the maximum AHV/AVS pension. However, this limitation has not been observed in the sample data. Thus all these people have been moved into another category, most of them have been put separately in the categories men or women living alone, and for those who were living with a younger partner (with no pension) they were put in the category ‘couple without children, only one retired’.

It could be argued that it would have been better to use the same sample for both parts of the study. Nonetheless, two arguments favoured to put forward two samples: 1. the small number of available households; 2. poverty is measured on households, not on individuals. For the second part, since a new sub-sample has been used, categories have been redesigned: the categories ‘couples with children’ and ‘single senior not living alone’ have been dismissed,

due to the small size of these groups, and the category ‘couples without children’ has been subdivided into both (partners) retired and only one (partner) retired.

Table 3-4 Socio-demographic characteristics of participants, sample 2

variable	category	frequency	Percentage	mean	
gender	male	443	40.8%		
	female	644	59.2%		
	Total	1087			
age	65/64 ~ 75	696	84.9%	73.82	
	76 ~ 85	335	40.9%		
	86 ~ 95	55	6.7%		
	96+	1	0.1%		
	Total	1087			
household	couple	with children	267	32.6%	
		without children	97	11.8%	
	single	male	97	11.8%	
		female	359	43.8%	
	Total	820	100.0%		
nationality	Swiss	1036	95.3%		
	foreign	51	4.7%		
	Total	1087			

Source: Swiss Household Panel (SHP)

The overall consequences of the second control lead to a higher number of single households and a drastic decrease of couples. Sample No. 2 counted 820 households, 1,184 people of whom 1,087 were aged over 65/64.

Variables

Respecting the SHP designation, following variables have been used from the two different data sets, Household (Swiss Household Panel, 2014a) and Individual (Swiss Household Panel, 2014b).

Table 3-5

List of variables

Name	Description	Values/Unit
Household		
COM2_13	Community (municipality) typology 2	1 Centre ¹⁰ Centres (1) Suburban communes (2) Wealthy communes (3) ----- 2 Peripheral Peripheral urban communes (4) Tourist communes (5) Industrial & tertiary sector communes (6) ----- 3 Rural Rural commuter communes (7) Mixed agricultural communes (8) Peripheral agricultural communes (9)
H13I76A	Financial subsidy for health insurance	CHF
I13HTYN	Yearly household income, net	CHF
I13HTAX	Total yearly taxes	CHF
Individual		
IDSPOU13	Identification number of partner or spouse (hetero or homosexual)	numeric
CIVSTA13	Civil status in year of interview	1 single, never married 2 married 3 separated 4 divorced 5 widower/widow 6 registered partnership 7 dissolved partnership
SEX13	Sex	0 male 1 female
AGE13	Age in year of interview	numeric
EDGR13	Highest level of education achieved	1 compulsory school 2 elementary vocational training 3 apprenticeship (CFC, EFZ) 4 full-time vocational school 5 vocational maturity

¹⁰ Values have been combined for the current study. Original coding is provided in brackets.

		6 general training school 7 bachelor/maturity (high school) 8 ¹¹ domestic science course, 1 year school of commerce 12 vocational high school with master certificate, federal certificate 13 technical or vocational school 14 vocational high school ETS, HTL etc. 15 university, academic high school, EPF, ETH 16 university of teacher education HEP, PH 17 university of applied sciences HES, FH 18 teacher training college
NAT_1_13	First nationality	Numeric
NAT_2_13	Second nationality	Numeric
PLINGU13	Interview language	0 German ¹² (2) 1 French (1) 1 Italian (3)
I13PTOTN	Total personal income, net	CHF
I13EMPYN	Income from employment, net	CHF
I13INDYN	Income from independent work, net	CHF
I13OASIY	OASI old age pension (AHV/AVS)	CHF
I13PENY	Income from pension (BVG/LPP)	CHF
I13WELY	Income from social assistance	CHF
I13WYN	Work income, net	CHF
I13STPY	Social public transfer income	CHF
I13STFY	Private informal transfer income	CHF
I13OSY	Income from other sources	CHF

All incomes are yearly amounts

¹¹ Values 9, 10, 11 have not been coded by the SHP researchers.

¹² German is coded as the dominant language, French and Italian as minorities' language. Original coding is provided in brackets

The variable I13OASIY includes both AHV/AVS benefits and EL/PC supplementary benefits. From a pension research perspective, it would have been preferable to list EL/PC benefits separately, since the financing mode is different and the EL/PC benefits are exempt of taxes. The AHV/AVS benefits are uniformly capped, while the supplementary benefits match effective expenses.

The SHP panel data does not specifically list a variable named after the 3rd pillar. On contrary, various others are mentioned like social assistance, public transfer and private transfer. Consequently the variable I13OSY has been used as an approximation of the third pillar pension, assuming that the variable “other source of income” is primarily composed by the third pillar. The lack of detailed information in the income section does not allow to validate that choice with certainty or to evaluate the accuracy of the estimation.

The total income of an individual has been obtained by adding amounts coming from the first, second pillars, other sources, work, public and private transfer. In other words by summing the following variables: I13OASIY, I13PENY, I13OSY, I13WYN, I13STPY, I13STFY.

3.3. *Data analysis*

To evaluate the effect of the pension system averting old age poverty and the contribution of each pillar in the three pillar system, descriptive statistics were used. Central tendency, statistical dispersion, distribution, e.g. mean, median, quintiles among other measures, helped to present large amounts of information in a manageable way and to make sense of it. In combination with simple graphics analysis (histogram, bar graph, pie chart, etc.) they composed the quantitative analysis for this study. Linear regression was used in the study on influencing factors on the pension system. The instruments used for the data analysis were SPSS Statistics software package and Microsoft Excel.

In summary, data provided by the SHP have been analyzed to answer research questions No. 2, 3 and 4 of the current study, namely how effective is

the pension system in preventing old age poverty, what is the contribution of each pillar to the total old age income, and what are the significant factors influencing pension benefits.

For that purpose, two sub-samples have been created. The first one, of larger size targeting households, brought an answer to research question No. 2, while the second sub-sample, smaller and focusing on individuals, was used to answer research question No. 3 and 4.

4. Research findings

The analysis of the SHP data, divided in four sections is presented in this chapter. First comes poverty level of households and poverty level of individuals, secondly income structure of the sample, thirdly a highlight on low income and finally influencing factors on pension benefits section ends this chapter. Research questions are restated and addressed during the presentation. For the three first parts of the study, descriptive statistics were applied, while for the last part, influencing factors, linear regression was applied.

4.1. *Definitions of poverty*

There are different ways to define poverty, firstly a relative poverty which is commonly defined at 60% or 50% median of population income, secondly an absolute poverty defined by an amount. The OECD establishes poverty statistics based on 50% median income while Eurostat prefers to refer to 60% median income.

In Switzerland, several organizations have defined absolute poverty levels differently. For example, the prosecutions and bankruptcy office considers CHF 1,200 per month as the basic living limit for a single person, while for the same situation, the AHV/AVS office set the limit at CHF 1,601. This limit determines entitlement to supplementary benefits. For the Swiss Conference for Social Assistance (SKOS/CSIAS)¹³ the absolute minimum basic living amounted to CHF 986/month in 2013 (2014, p.3). The SKOS/CSIAS plays a dominant role in the public assistance field by providing guidelines (Obinger et al., 2005). Although their recommendations are not legally binding, they are widely followed. Between this minimum basic living standard and the relative poverty line of 50% median, the SKOS/CSIAS defines also a “floating”

¹³ The SKOS/CSIAS aims to coordinate social assistance in Switzerland, since the public assistance is the responsibility of the cantons and not the federal government.

threshold of poverty, which can be calculated by adding average housing cost and average health premiums to that basic living amount. It means that each canton will have a different “floating” poverty line, adapted to regional socio-economic conditions. Each year that amount is adapted depending on housing costs and health insurance premiums. For 2014, the rounded national average “floating” poverty amount was equivalent to CHF 2,500/month or CHF 30,000/year¹⁴. The Swiss Federal Statistical Office (FSO) has its own method to define the absolute level of poverty, which sets the threshold slightly lower than the SKOS/CSIAS, namely at CHF 26,400 for the year 2012. It follows the same principle as the SKOS/CSIAS, but since health insurance premiums have already been deducted from the income, it is replaced with a fixed amount of CHF 100 for other necessary expenditure.

For the calculation of equivalised income, the SKOS/CSIAS (2014) does not follow the OECD progression factor of 0.5 for each additional person living in the same household, but rather uses its own table.

Table 4-1 SKOS absolute minimum levels

household size	equivalising factor	fixed amount per month	fixed amount per year
1 person	1.00	986	11,832
2 persons	1.53	1,509	18,108
3 persons	1.86	1,834	22,008
4 persons	2.14	2,110	25,320
5 persons	2.42	2,386	28,632
6 persons	2.70	2,662	31,944
7 persons	2.98	2,938	35,256

For that absolute poverty scale, no difference between children and adults is made – some equivalised income scale attributes a 0.3 factor to each additional child – since it concerns minimum absolute basic living.

¹⁴ The limit for 2013 could not be found, therefore for the current study the same threshold as for 2014 was chosen. Apparently this information is provided every other year.

In the current study, four different levels of poverty have been used:

1. the 50% median relative poverty (which amounted to CHF 36,708 in 2012¹⁵),
2. the SKOS/CSIAS “floating” absolute poverty, 3. the FSO absolute poverty,
4. the SKOS/CSIAS absolute minimum basic living poverty.

Table 4-2 Levels of poverty according to households type

	SKOS absolute minimum	SKOS floating level	FSO
Single	11,832	30,000	26,400
2 adults without children	18,108	44,400	36,600
One adult with 2 children	22,008	48,000	42,000
Two adults with 2 children	25,320	58,200	48,600

Seniors depending solely on the 1st pillar and receiving the maximum AHV/AVS pension (28,080) would stand between the FSO and SKOS/CSIAS limits. Without any other available means of income, they would have to apply for supplementary benefits. This category of households would be considered as poor by the SKOS/CSIAS but not by the federal administration.

4.2. Level of poverty

4.2.1. Poverty rate of households

Sample 1

Based on the household total income, the poverty level of the sample 1 stood at 28.4%, which is quite higher than the OECD average of 21.8%. That point will be further discussed in the following section. At the floating SKOS/CSIAS limit poverty remains at a high level, only from the level defined by the federal administration (FSO) poverty rate drops below 10%. All six

¹⁵ Since the 2013 median income for the whole Swiss population was not possible to find, the figure for 2012 was considered, it amounted to CHF 6,118 (Ulrich, 2014). As the inflation remained low, it is considered to be a good approximation.

households living with less than the SKOS/CIAS absolute minimum have declared no other source of income but AHV/AVS pension.

Table 3-2 (copy) Central tendencies of households, sample 1

	men living alone	women living alone	couples without children	couples with children	single senior not living alone	total
frequency						
N	90	354	633	52	25	1154
%	7.8%	30.7%	54.9%	4.5%	2.2%	100%
total income (CHF)						
mean	64,973	46,671	94,313	176,177	91,883	81,047
median	62,400	39,065	80,000	135,200	76,800	66,000

Source: Swiss Household Panel (SHP)

As expected, women living alone represent the biggest group of poor households. At 50% median income level, they are quasi twice as many as single men households, at lower poverty thresholds the gap narrows down, but single women still remain the biggest group.

Couples (both types) show lower levels of poverty compared to single households. Couples with children, which could be called families, seem to be better protected from poverty; they showed the lowest percentage for each threshold, except for the SKOS/CIAS absolute minimum level. In contrast, the “single seniors not living alone” category does not seem to benefit in the same way of living with other people, their poverty levels were situated between single men and single women ratios, except for the absolute SKOS/CIAS level, suggesting that their financial situation follows more a single household tendency than a multiple members’ households (see figure 4-1).

Table 4-3

Households poverty, sample 1

	men living alone	women living alone	couples without children	couples with children	single senior not living alone	total
50% median	24	157	132	7	8	328
floating SKOS	19	89	72	2	5	187
FSO	11	53	26	2	4	96
absolute SKOS	0	2	3	1	0	6

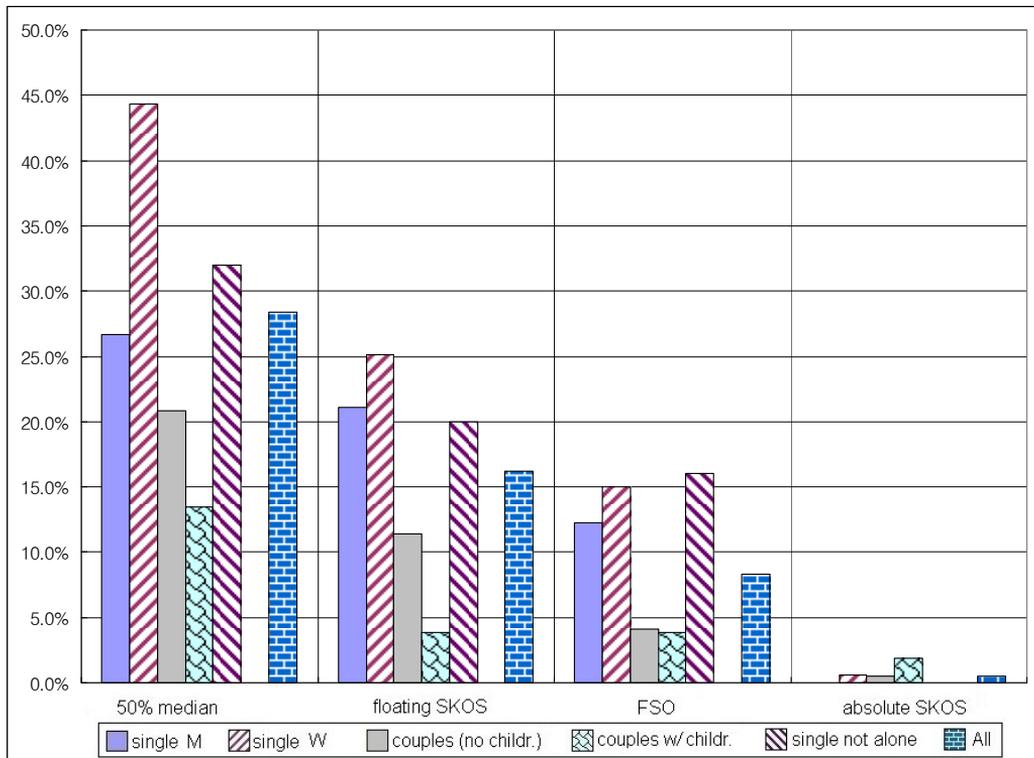
same results in percent

50% median	26.7%	44.4%	20.9%	13.5%	32.0%	28.4%
floating SKOS	21.1%	25.1%	11.4%	3.8%	20.0%	16.2%
FSO	12.2%	15.0%	4.1%	3.8%	16.0%	8.3%
absolute SKOS	0.0%	0.6%	0.5%	1.9%	0.0%	0.5%

Source: Swiss Household Panel (SHP)

Figure 4-1

Households poverty, sample 1



Source: Swiss Household Panel (SHP)

This order of groups at risk of poverty (single women, single men, couples) has been found similarly by Wanner & Gabadinho (2008) in their research on the economical situation of active and retired people, they put in contrast couple and single households. Bianchi & Aregger (2012, p. 7) state that pension levels clearly depend on gender and household structure, the traditional gender role has a direct impact on the design of the pension system: spouses of double parents families are rarely covered by all three pillars or benefit less often from the 2nd pillar compared to women living alone. In 2012, old age poverty stood at 16.4% compared to 7.7% for the whole Swiss population (Guggisberg & Häni, 2014).

Sample 2

The second sample allowed a more in depth study based on individuals. For this reason the validity and consistency check of the sample information had been carried on each earning individual composing the households, implying that both couple partners needed to have consistent income information to be selected. The switch of units from households to individuals enabled the use of more diverse variables, the most important being the 1st, 2nd and 3rd pillar. The second sample characteristics are quite different from the first one, a description of its structure and poverty levels has been judged necessary. Furthermore, as explained in the methodology chapter, the second sample has been subdivided into different types of categories: 1. men living alone, 2. women living alone, 3. couples without children, both retired, 4. couples without children, one retired.

Tendencies remain the same and only small variations are visible compared with the first sample; although all poverty rates are slightly higher. At 50% median income, the poverty level peaks at 31.1%. The income (mean and median) is slightly lower compared to sample No.1. The expected consequence for the analysis was to obtain higher levels of poverty in comparison with other research on old age poverty, as it was observed with the Swiss old age poverty level computed by the OECD.

Table 4-4

Characteristics of sample 2 (households)

	men living alone	women living alone	couples without children both retired	couples without children one retired	total
frequency					
N	97	359	267	97	820
%	11.8%	43.9%	32.6%	11.8%	100%
total income					
mean	64,939	46,529	103,736	106,912	74,477
median	60,000	38,400	88,800	95,297	59,749
1st pillar					
N	95	359	266	96	816
%	97.9%	100%	99.6%	99.0%	99.5%
mean	26,105	25,787	40,446	26,793	30,717
median	27,000	26,400	41,300	26,900	27,849
1+2 pillars					
N	59	219	212	65	555
%	62.1%	61.0%	79.7%	67.7%	67.7%
Mean	49,287	39,620	82,378	55,303	56,541
median	45,597	34,100	77,097	45,591	45,600
1+2+3 pillars					
N	21	76	104	40	241
%	22%	21%	39%	41%	29.4%
mean	53,818	43,717	94,988	72,152	64,970
median	47,997	36,697	81,091	57,894	51,594

Yearly amounts in CHF

Source: Swiss Household Panel (SHP)

On the next page, the households poverty rate of the sample 2 are summarized and illustrated.

Table 4-5

Households poverty, sample 2

	men living alone	women living alone	couples without children	couples with children	total
50% median	28	162	45	20	255
floating SKOS	21	96	31	17	165
FSO	11	52	10	16	89
absolute SKOS	0	4	0	3	7

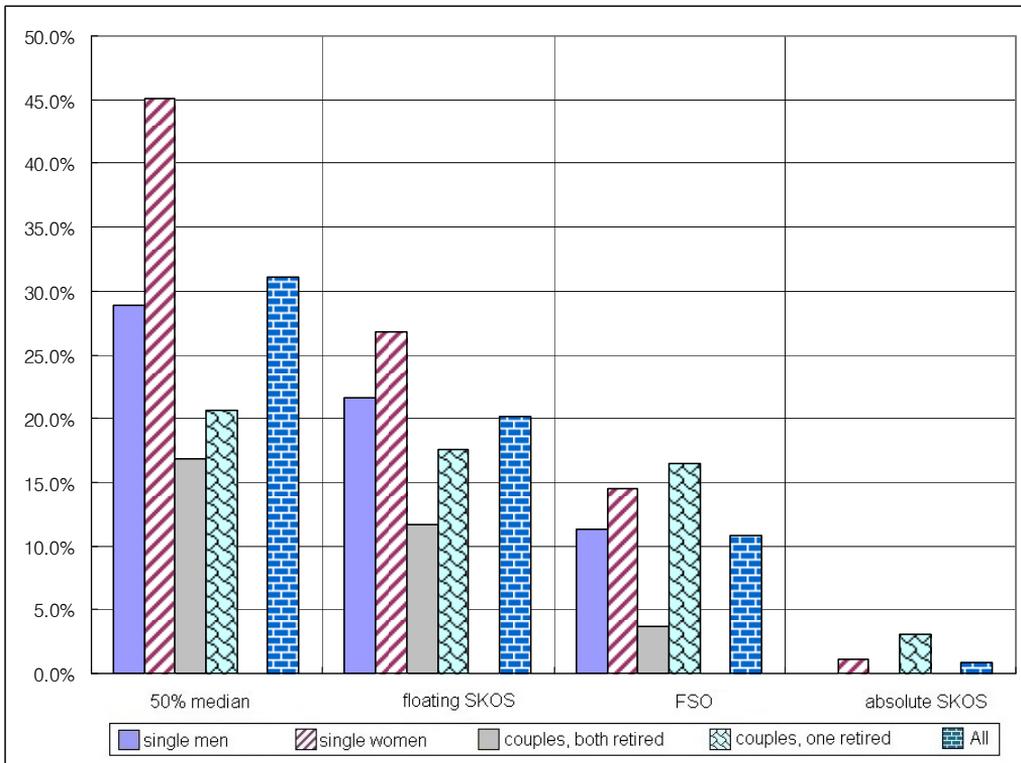
same results in percent

50% median	28.9%	45.1%	16.9%	20.6%	31.1%
floating SKOS	21.6%	26.7%	11.6%	17.5%	20.1%
FSO	11.3%	14.5%	3.7%	16.5%	10.9%
absolute SKOS	0.0%	1.1%	0.0%	3.1%	0.9%

Source: Swiss Household Panel (SHP)

Figure 4-2

Households poverty, sample 2



Source: Swiss Household Panel (SHP)

4.2.2. Poverty rate of individuals

From now on, the study will focus on individuals and the composition of their income and the importance of the public pension and occupational pension in regard of the total income. Consequently, 97 people too young to yet receive a pension (transitional year included) have been dismissed. The category ‘couples without children, one retired’ counts henceforth 97 individuals (79 men, 18 women). The characteristics of the second sample are summarized in the following table.

Table 4-6 Characteristics of sample 2 (individuals)

	living alone		living as couple without children both retired		living as couple without children one retired		total
	men	women	men	women	men	women	
frequency							
N	97	359	267	267	79	18	1087
%	8.9%	33.0%	24.6%	24.6%	7.3%	1.7%	100%
total income							
mean	64,939	46,529	73,288	30,449	82,281	34,838	53,190
median	61,200	38,400	64,000	21,000	67,000	25,150	39,400
1st pillar							
N	95	359	265	257	79	17	1072
%	97.9%	100.0%	99.3%	96.3%	100.0%	94.4%	98.6%
mean	26,105	25,787	21,072	19,375	25,437	19,028	22,945
median	27,000	26,400	21,000	20,400	26,400	20,350	21,600
1+2 pillars							
N	59	219	195	72	51	10	606
%	60.8%	61.0%	73.0%	27.0%	64.6%	55.6%	55.7%
mean	49,287	39,620	57,806	24,572	55,407	24,821	42,156
median	45,597	34,100	52,200	20,797	49,200	23,049	32,000
1+2+3 pillars							
N	21	76	90	33	24	2	246
%	21.6%	21.2%	33.7%	12.4%	30.4%	11.1%	22.6%
mean	53,818	43,717	65,909	29,079	66,856	30,874	47,943
median	47,997	36,697	57,600	20,894	53,797	23,046	35,997

Yearly amounts in CHF

Source: Swiss Household Panel (SHP)

The sample 2 median income is CHF 39,400, which shows a clearly weaker economical capacity compared to the sample analyzed by Wanner & Gabadinho (2008), which median was CHF 52,100. It is equally below the SILC equivalised median of CHF 41,815, mentioned by Guggisberg & Häni (2014).

The 1st pillar coverage is almost the same as the ratio (98.5%) found by Guggisberg & Häni (2014, p. 10). Nevertheless, the SILC participants' beneficiary ratio was higher for the 2nd (66.8%) and the 3rd pillar (27.7%).

Levels of poverty measured with different bases (total income, 1st pillar, 1+2 pillars and 1+2+3 pillars) bring following comments. The effect of the 2nd pillar is clearly visible when observing poverty levels at 50% median income or floating SKOS/CSIAS limits (see figure 4-4 and 4-5). In the same way, the importance of the 1st pillar on old age income is also distinctly noticeable. The difference in poverty definition between FSO and SKOS/CSIAS is not high, CHF 3,400, but sufficient to see a significant drop in the number of poor households between these two groups on the figure 4-4. As mentioned before, the reason lies in the fact that the maximum AHV/AVS pension is situated between the FSO and SKOS/CSIAS thresholds.

Due to the categories design of this second sample, retired women living with a non-pensioner stand high in poverty rate (see figure 4-5 and 4-6). However, when all household' incomes are considered to measure poverty, they benefit of the higher income from their partner/spouse. To a lesser extent, the same phenomenon is noticeable for men of this same category.

Pilgram & Seifert (2009, p. 35) reported that according to optimistic estimations, the median income of old people is on average 22% lower than the active population median income.

Table 4-7

Persons poverty based on total income

	living alone		living as couple without children both retired		living as couple without children one retired		total
	men	women	men	women	men	women	
50% median	28	162	45	45	15	5	300
floating SKOS	21	96	31	31	13	4	196
FSO	11	52	10	10	12	4	99
abs SKOS	0	4	0	0	1	2	7

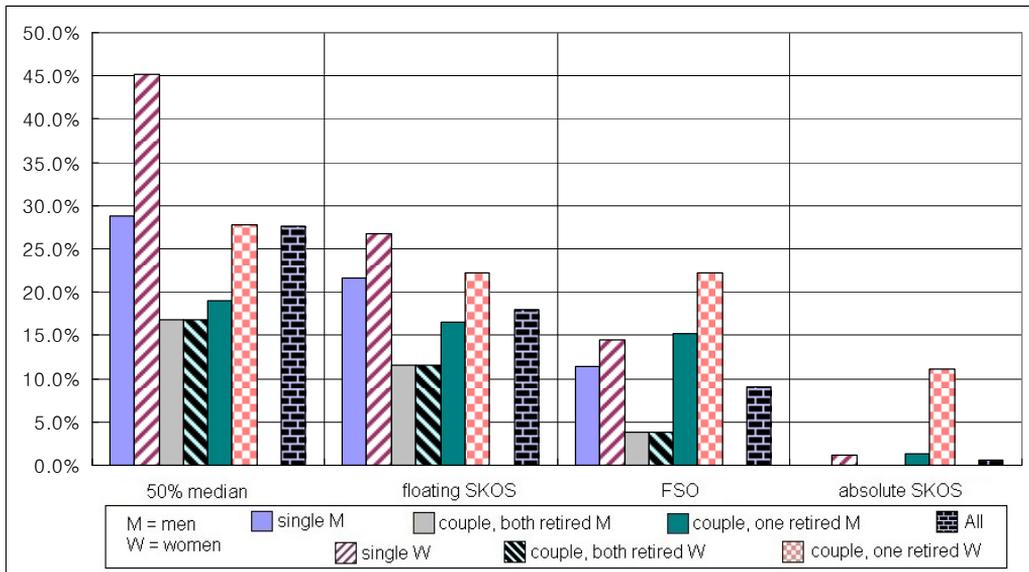
same results in percent

50% median	28.9%	45.1%	16.9%	16.9%	19.0%	27.8%	27.6%
floating SKOS	21.6%	26.7%	11.6%	11.6%	16.5%	22.2%	18.0%
FSO	11.3%	14.5%	3.7%	3.7%	15.2%	22.2%	9.1%
abs SKOS	0.0%	1.1%	0.0%	0.0%	1.3%	11.1%	0.6%

Source: Swiss Household Panel (SHP)

Figure 4-3

Persons poverty based on total income



Source: Swiss Household Panel (SHP)

Table 4-8

Persons poverty based on 1st pillar

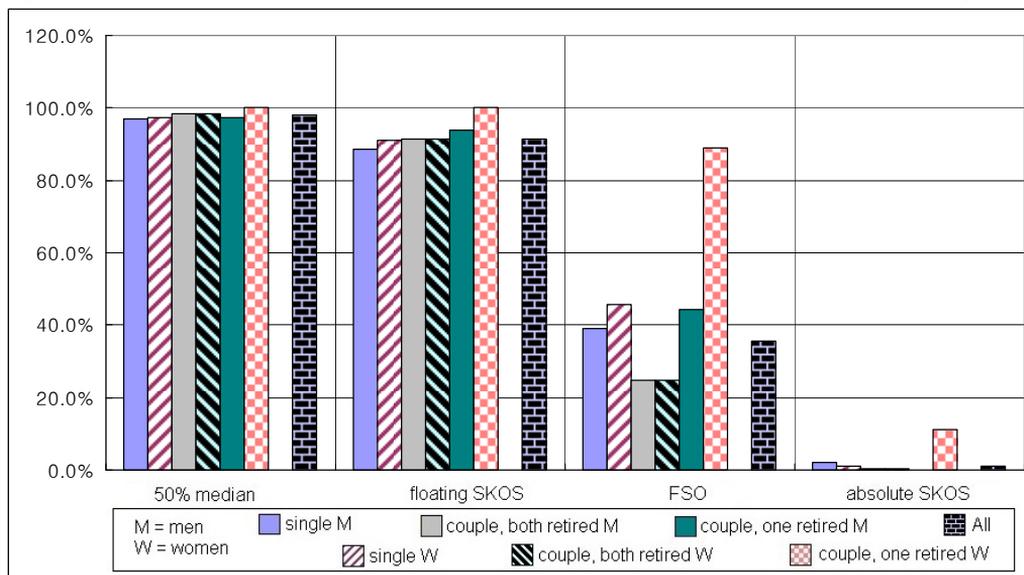
	living alone		living as couple without children both retired		living as couple without children one retired		total
	men	women	men	women	men	women	
50% median	94	350	263	263	77	18	1065
floating SKOS	86	327	244	244	74	18	993
FSO	38	164	66	66	35	16	385
abs SKOS	2	4	1	1	0	2	10

same results in percent

50% median	96.9%	97.5%	98.5%	98.5%	97.5%	100.0%	98.0%
floating SKOS	88.7%	91.1%	91.4%	91.4%	93.7%	100.0%	91.4%
FSO	39.2%	45.7%	24.7%	24.7%	44.3%	88.9%	35.4%
abs SKOS	2.1%	1.1%	0.4%	0.4%	0.0%	11.1%	0.9%

Source: Swiss Household Panel (SHP)

Figure 4-4

Persons poverty based on 1st pillar

Source: Swiss Household Panel (SHP)

Table 4-9

Persons poverty based on 1+2 pillars

	living alone		living as couple without children both retired		living as couple without children one retired		total
	men	women	men	women	men	women	
50% median	42	199	74	74	30	15	434
floating SKOS	35	140	55	55	27	14	326
FSO	19	86	22	22	13	12	174
abs SKOS	0	4	1	1	0	1	7

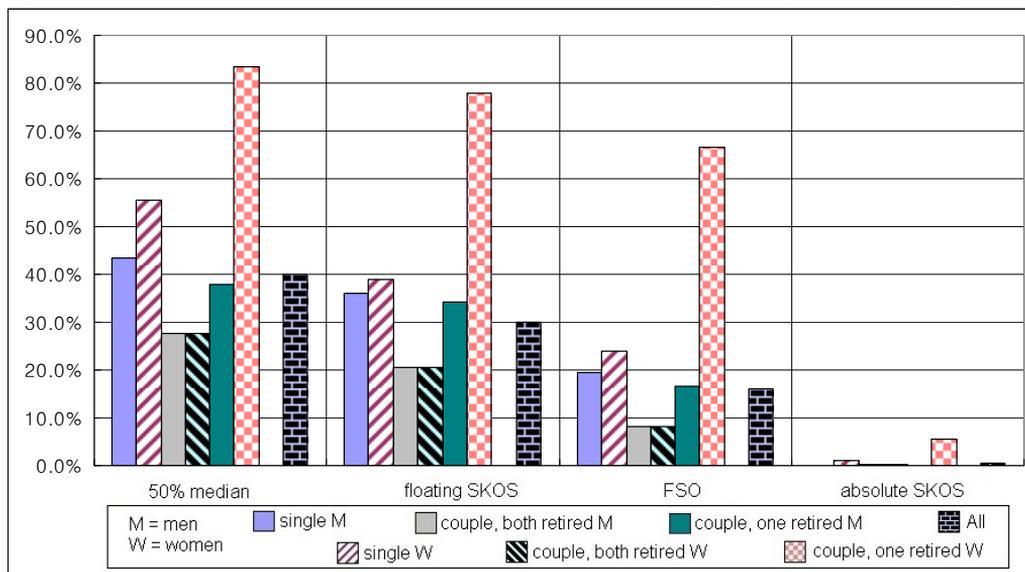
same results in percent

50% median	43.3%	55.4%	27.7%	27.7%	38.0%	83.3%	39.9%
floating SKOS	36.1%	39.0%	20.6%	20.6%	34.2%	77.8%	30.0%
FSO	19.6%	24.0%	8.2%	8.2%	16.5%	66.7%	16.0%
abs SKOS	0.0%	1.1%	0.4%	0.4%	0.0%	5.6%	0.6%

Source: Swiss Household Panel (SHP)

Figure 4-5

Persons poverty based on 1+2 pillars



Source: Swiss Household Panel (SHP)

Table 4-10

Persons poverty based on 1+2+3 pillars

	living alone		living as couple without children both retired		living as couple without children one retired		total
	men	women	men	women	men	women	
50% median	37	180	54	54	26	14	365
floating SKOS	28	120	41	41	23	12	265
FSO	15	71	17	17	11	12	143
abs SKOS	0	4	0	0	0	1	5

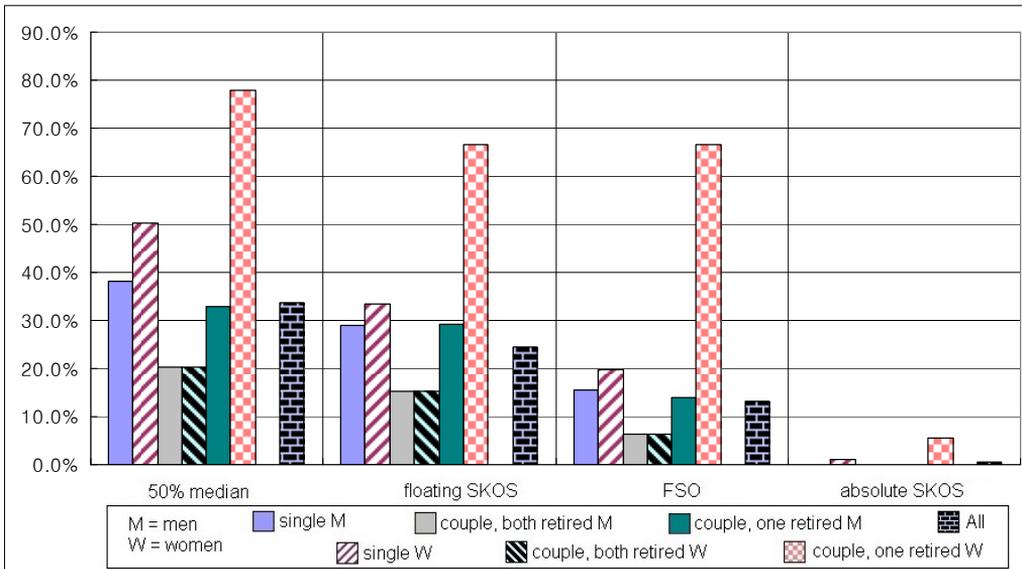
same results in percent

50% median	38.1%	50.1%	20.2%	20.2%	32.9%	77.8%	33.6%
floating SKOS	28.9%	33.4%	15.4%	15.4%	29.1%	66.7%	24.4%
FSO	15.5%	19.8%	6.4%	6.4%	13.9%	66.7%	13.2%
abs SKOS	0.0%	1.1%	0.0%	0.0%	0.0%	5.6%	0.5%

Source: Swiss Household Panel (SHP)

Figure 4-6

Persons poverty based on 1+2+3 pillars



Source: Swiss Household Panel (SHP)

4.3. *Income structure*

The precedent section presented the cumulative sum of 1st, 2nd and 3rd pillar. On the contrary, in this section they are displayed separately, as distinct components of the total income. Other categories of income are work (employed or independent), public transfer and private transfer.

The quasi universal feature of the AHV/AVS is demonstrated by the very high level of recipients (98.6%). Unlike married (or in cohabitation) women, every single woman of the sample No.2 receives AHV/AVS benefits. In comparison only 97.9% of single men get a public pension, those men in the 2.1% group have probably deferred their pension. In all three categories, women receive on average a lower 1st pillar than men.

Slightly over half of participants (55.7%) are beneficiary of a 2nd pillar pension. Again, in an atypical way, a slightly higher percentage of single women than single men get occupational pension (it could be attributed to margin error), however in average the pension level is much unfavorable to women.

With 22.6%, more than a fifth of the sample can rely on the 3rd pillar for their living expenses. Once more, single women and single men show almost equal percentage of recipients, again with a lower 3rd pillar amount for women. At the same time couple partners reveal similar disparities in beneficiary ratio as well as in pension amounts compared to the 2nd pillar.

Considering the 1st, 2nd, 3rd pillar together, single men and women show a similar percentage of recipients, with smaller pension for women. Spouses or partners reveal more visible disparities both in term of coverage or of benefits levels.

A consistent number (16.8%) of old people continue to work after reaching retirement age. Men are more numerous to work and gain higher wages, the gap lies between four and six folds, and men are twice as likely as women to work, except for the category 'living as couple, without children, one retired' where the gap is much smaller.

Even if AHV/AVS recipients are entitled to supplementary benefits, 3.9% of people aged 65/64+ still receive social assistance, which can be public assistance or from other institutions (not specified). All groups receive that subsidy and the group which counts the lowest number of recipients is women 'living as couple, without children both retired'.

The last income category mentioned is private transfer, it benefited to 2.9% of the current sample seniors. They are found mainly in the single women category and among men living as couple without children, one retired partner.

Table 4-11 Income structure

	living alone		living as couple without children both retired		living as couple without children one retired		total
	men	women	men	women	men	women	
frequency							
N	97	359	267	267	79	18	1087
%	8.9%	33.0%	24.6%	24.6%	7.3%	1.7%	100%
total income							
mean	64,939	46,529	73,288	30,449	82,281	34,838	53,190
median	61,200	38,400	64,000	21,000	67,000	25,150	39,400
1st pillar							
N	95	359	265	257	79	17	1072
%	97.9%	100.0%	99.3%	96.3%	100.0%	94.4%	98.6%
mean	26,105	25,787	21,072	19,375	25,437	19,028	22,945
median	27,000	26,400	21,000	20,400	26,400	20,350	21,600
2nd pillar							
N	59	219	195	72	51	10	606
%	60.8%	61.0%	73.0%	27.0%	64.6%	55.6%	55.7%
mean	23,182	13,833	36,734	5,197	29,970	5,793	19,211
median	18,600	6,900	30,000	0	21,600	2,750	6,000
3rd pillar							
N	21	76	90	33	24	2	246
%	21.6%	21.2%	33.7%	12.4%	30.4%	11.1%	22.6%
mean	4,531	4,097	8,103	4,507	11,450	6,053	5,787
median	0	0	0	0	0	0	0

work							
N	24	35	56	31	31	6	183
%	24.7%	9.7%	21%	11.6%	39.2%	33.3%	16.8%
mean	9,966	1,603	6,689	1,099	14,861	3,759	4,474
median	0	0	0	0	0	0	0
social transfer							
N	7	16	14	2	2	1	42
%	7.2%	4.5%	5.2%	0.7%	2.5%	5.6%	3.9%
mean	1,021	326	610	9	210	197	369
median	0	0	0	0	0	0	0
private transfer							
N	1	22	2	4	3	0	32
%	1.0%	6.1%	0.7%	1.5%	3.8%	0.0%	2.9%
mean	121	874	68	248	212	0	392
median	0	0	0	0	0	0	0

Yearly amounts in CHF

Source: Swiss Household Panel (SHP)

D'Epinay et al. (1998, p. 60) found that in 1990, 25% of men continued to work after retirement, while slightly more than 10% of women were doing the same. For Bonoli & Bertozzi (2008), old age workers in Switzerland have a very high level of participation by international comparison, especially men. Therefore they suggest not to raise unilaterally retirement age but rather to set up measures to increase employment of seniors in non straining occupation.

4.3.1. Income disparities

Quintiles and associated graphical representation of the income structure allow a more easy apprehension of the sample different economical classes.

People in the lowest quintile depend primarily on the 1st pillar for their living. The progression of the second pillar throughout the quintiles can be explained by the characteristics of the Swiss occupational pension plan. Firstly, until 2004, employed people needed to gain more than the maximal AHV/AVS pension to be insured by the BVG/LPP scheme. It means part time and irregular workers were often not covered by the 2nd pillar. Secondly only minimum pension benefits are defined in the law, employers and employees have the

liberty to agree on more generous pension plans, as long as they are approved by fiscal authorities. Higher incomes allow better old age planning during active life, corollary higher 2nd pillar benefits after retirement. If only minimum pension benefits, as defined in the law, were represented in this graphic, the outlook would be surely different. However currently there are no available data, because only the total occupational pension is collected as information in this kind of surveys.

Over 15% of seniors continue to work after retirement age, but are only visible in the fifth quintile. The hypothesis is that in other quintiles, the level or frequency of wages is too low to appear in the quintiles figures. Reasons to continue working activity past retirement age are probably not the same for the different quintiles members. With over 35%, self-employed were overrepresented among men compared to other types of jobs as suggested by d'Epinay et al. (1998, p. 63). By contrast women were mainly employed as non-qualified worker or non-manual qualified worker. Self-employed category was only third with 15%.

Table 4-12 Income quintiles

percentiles	work	1st pillar	2nd pillar	3rd pillar	other	total
20%	0	20,200	697	155	548	21,600
40%	0	21,000	6,597	1,439	3,984	33,020
60%	0	24,000	15,880	3,997	4,803	48,680
80%	0	27,600	34,800	5,337	4,863	72,600

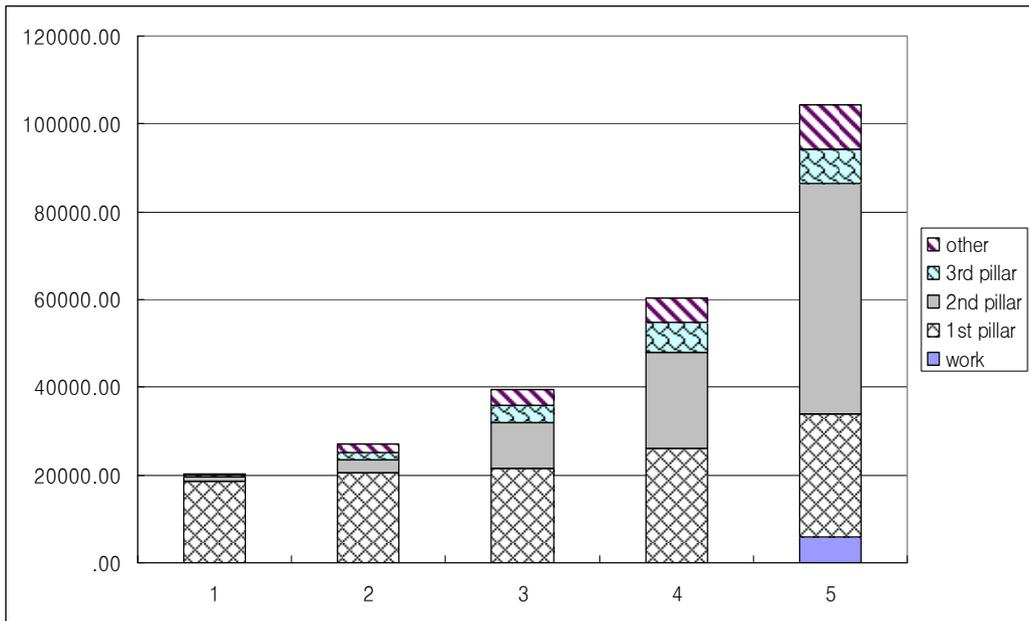
Yearly amounts in CHF

Source: Swiss Household Panel (SHP)

In the same way as Bianchi & Aregger (2012) have demonstrated, in the current sample the 2nd pillar is gradually becoming more important to surpass the AHV/AVS in the fifth quintile. Pilgram & Seifert (2009) have similarly showed that in the highest quintile, incomes consisted firstly from the 2nd pillar, followed by the 1st pillar.

Figure 4-7

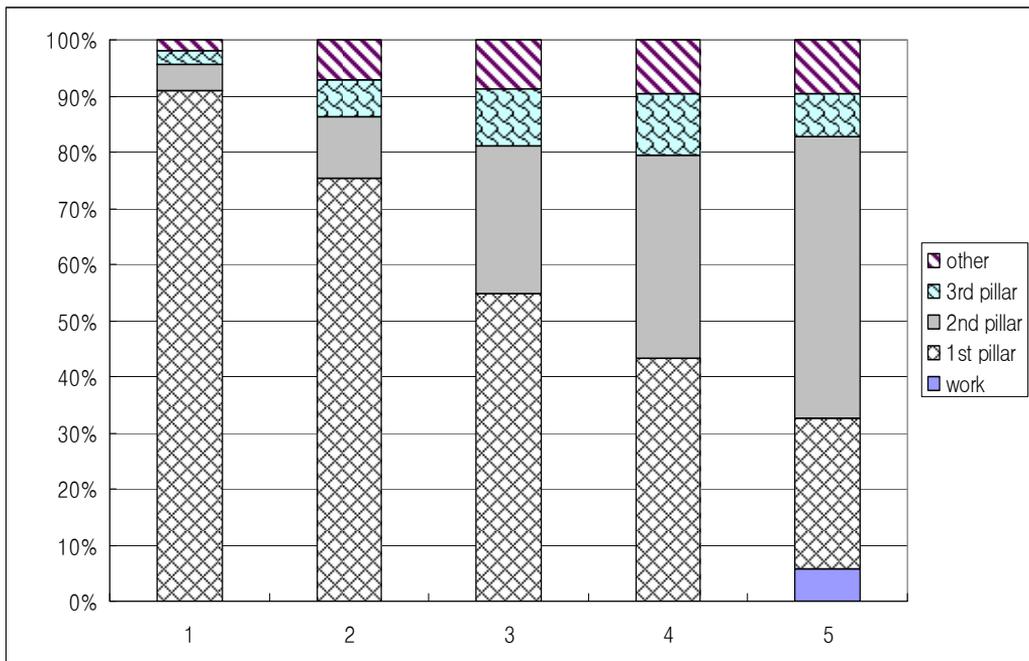
Income quintiles in CHF



Source: Swiss Household Panel (SHP)

Figure 4-8

Income quintiles in percentage



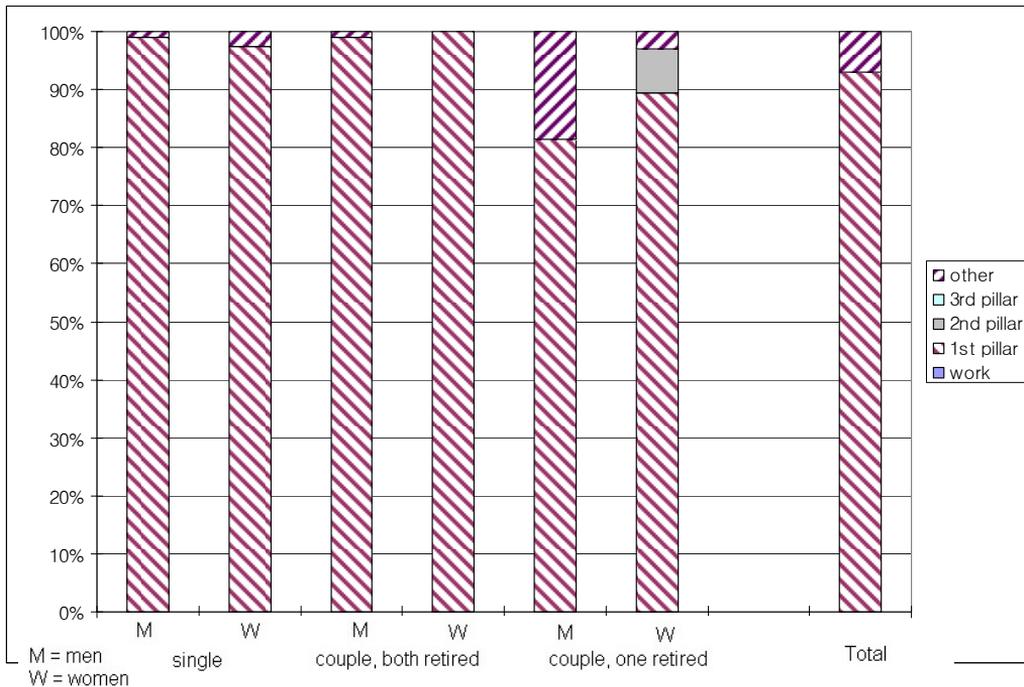
Source: Swiss Household Panel (SHP)

4.3.2. Low income structure

The income structure of the lowest quintile not only presents disparities from the fifth, but also shows variations within the quintile, between the different types of households. Instead of strictly selecting people from the first quintile, seniors (113) considered as poor following the relative FSO limit (CHF 26,400/yearly) have been selected to represent the low income group.

Since the median income graphic (figure 4-9) did not reveal much information, it had been decided to switch for the mean income as indicator. As a consequence, this change of base, does not allow anymore a direct comparison with other figures and tables. However limited strictly to this context of low income structure, it helps to understand the variations between the different kind of households, and the trends when compared with the whole sample.

Figure 4-9 Median income structure of poor people



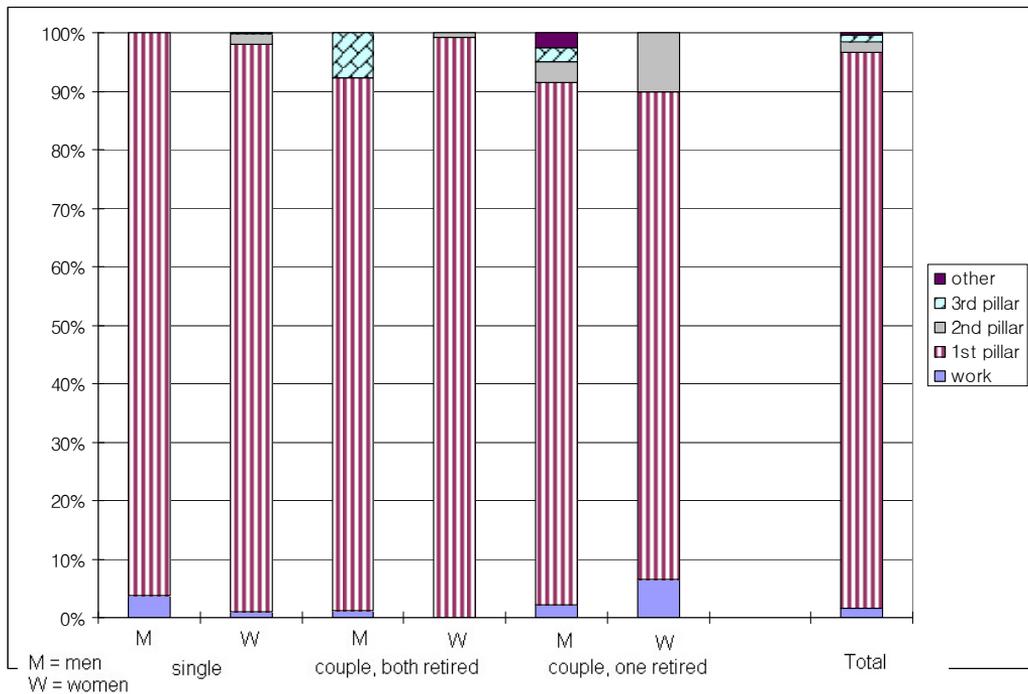
Source: Swiss Household Panel (SHP)

In every category, a small portion of the income originates from work, except for married women living with a retired partner. For every category as

well, the first pillar is the main source of income, representing over round 90% of the total income. Only for women living with a non pensioner partner, the 2nd pillar is significant, representing ten percent; however the relevance of that trend is questionable since that group is composed of only four cases.

Even if the universal coverage of the AHV/AVS is positive, the level of benefits does not allow old people who have no other source of income to escape from the risk of poverty. The maximum AHV/AVS pension is situated between the FSO and SKOS/CSIAS poverty limits. For Bianchi & Aregger (2012) the 1st pillar pensions are too low and they recommend an increase of the benefits.

Figure 4-10 Mean income of low earners

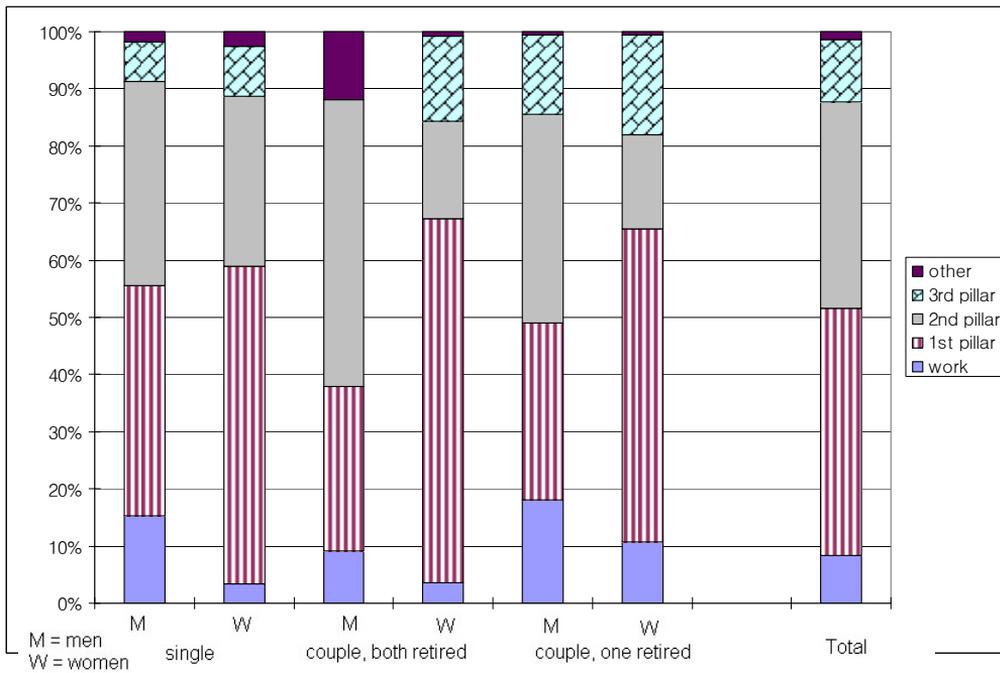


Source: Swiss Household Panel (SHP)

On the figure “mean income structure of the total sample” (figure 4-11) the lesser dependency of men on the 1st pillar is more clearly visible. The higher relative share of the 2nd pillar for men, compared to women, is also distinctly observable.

Figure 4-11

Mean income structure of the total sample



Source: Swiss Household Panel (SHP)

4.4. Factors influencing each pillar benefits

In this last section of the study, four linear regressions have been conducted in order to provide an answer to the last research question, by determining significant factors influencing each pillar benefits. Dependent variables have been defined as follows: 1. total income/50% median for all households, 2. income from 1st pillar/total income, 3. income from 2nd pillar/total income, 4. income from 3rd pillar/total income. As for influencing factors, following independent variables have been selected: age, gender, marital status, highest level of education, nationality, type of municipal residency and language of interview.

As observed in previous sections, gender and household structure were correlated with poverty levels. In this section the marital status variable is a substitute for the household structure. At the time of pension inception, the traditional family concept prevailed, i.e. role and duties of household members

were strictly defined and gendered. The male breadwinner model is still visible in the type and levels of pension benefits. Higher life expectancy of women was one reason to select age as a variable. While Wanner & Gabadinho (2008, p. 32) showed lower income for older old, Guggisberg & Häni (2014, p. 11) and Höpflinger (1997, p. 11) pointed out increasing dependency on supplementary benefits for older elderly. Unlike the public pension, the mandatory occupational pension has been in place for a relative short period of time, i.e. 28 years. Even people who retired in 2013 had an incomplete occupational pension career and thus a lower 2nd pillar pension.

Wanner & Gabadinho (2008) explained that the labour sector characterizing the work career is correlated with the pension career and benefit levels after retirement. Instead of the labour sector variable, because that information was not available for every participant, the highest level of education has been used as a substitute. Unlike other developed countries, even today the percentage of young Swiss people pursuing higher education remains at a relatively low level, around 35%. Then the level of education remains an approximation and generally in pension research, more information on pensioners' work career would allow extended and in depth analyses. Women, foreign nationals and older old people are overrepresented in the group who depends exclusively on the 1st pillar pension (Pilgram & Seifert, 2009). Although foreign nationals represented 10% of the AHV/AVS pensioners, they counted for 8.2% of paid pensions (Méry, 2014). If pensioners residing abroad are included the figures are 36% of foreign nationals AHV/AVS pensioners receiving 17% of paid AHV/AVS benefits. Obinger et al. (2005, p. 298) detailed the importance of federalism on the 26 cantonal levels of taxations and social securities. Several studies on old age (Méry, 2014; Wanner & Gabadinho, 2008; d'Epinay et al., 1998) cited the canton of residence as one of the influencing factors, justifying the measurement of poverty based on different cantonal levels and not only on the national poverty level for Wanner & Gabadinho (2008). As

the sample was too small to be evenly representative of each canton's old age population, the type of municipal residency variable has been selected instead. The language of interview had been selected on the assumption that minorities would present a lower economical capacity.

Formally, the unit should have been household, but it would have meant loosing relevant information like gender, age, level of education, thus, individual has been kept as the study unit (N = 1087), and the income is not the real household income, but limited to the individual contributing part. The sample median income was CHF 39,400 and corollary 50% median was CHF 19,700. It is to be noted that the sample median is quite low compared to the Swiss population median (73,416).

Variables

gender: male = 0, female = 1

marital status: single = 0, either married or living as couple = 1

nationality: foreign = 0, Swiss = 1

education, see variable EDGR13

1 compulsory school

∴↓

17 university of applied sciences HES, FH

18 teacher training college

residency, see variable COM2_13

1 centres

2 peripheral

3 rural

language of interview: German¹⁶ = 0, French or Italian = 1

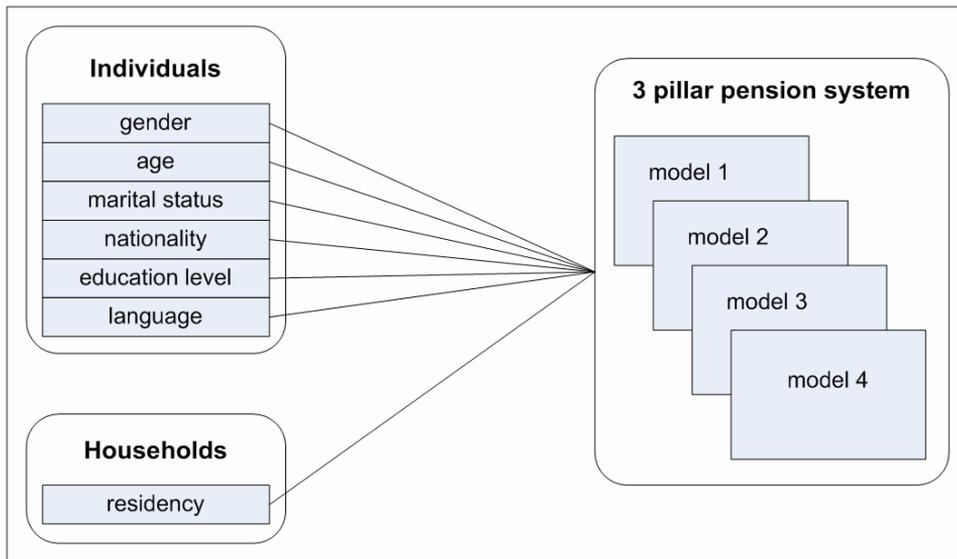
For full detail on variable values, see Table 3-5 on p. 44.

The hypothesis of the language having an influence on the economical sufficiency of households had been disconfirmed.

¹⁶ German is coded as the dominant language, French and Italian as minorities' languages.

Figure 4-12

Structural model of influencing factors on the pension system



4.4.1. Results

Descriptive statistics

The mean of DV No. 1 is 2.700 (SD = 2.321), the income distribution of the sample is standard. The mean of DV No. 2 is 0.617 (SD = 0.311), which means roughly 62% of the total income stems from the 1st pillar. The mean of DV No. 3 is 0.261 (SD = 0.277), which signifies that the 2nd pillar represent about 26% of the total income. The mean of DV No. 4 is 0.0573, which could be understood as the 3rd pillar contributing for 5.7% of the total income. The standard deviation is 0.1471 or 257%.

Linear regressions

All regressions were statistically consistent, but the R squared value of regression No. 4 was small (0.030). Model No. 4 exposed also the highest standard deviation of over 250% compared to the mean value. Consequently it is possible to say, with the total effect being the pension system combined with private and public transfer, the 1st pillar contributed for 62% of the total effect, while the influence of the 2nd pillar was 26%. Considering the small R squared value and the high standard deviation of model No.4 and the small number of

participants in this category, no conclusive deduction can be made about the estimated 3rd pillar.

Linear regressions

	Model 1		Model 2		Model 3		Model 4	
	$\frac{\text{total income}}{50\% \text{ median of sample}}$		$\frac{1^{\text{st}} \text{ pillar income}}{\text{total income}}$		$\frac{2^{\text{nd}} \text{ pillar income}}{\text{total income}}$		$\frac{3^{\text{rd}} \text{ pillar income}}{\text{total income}}$	
description	mean	SD	mean	SD	mean	SD	mean	SD
	2.700	2.321	0.617	0.311	0.261	0.277	0.0573	0.1471
coefficients	B	t	B	t	B	t	B	t
gender	-1.693	-11.223 ***	.235	12.287 ***	-1.175	-9.730 ***	-0.20	-1.945 *
age	-.038	-3.564 ***	.007	5.074 ***	-.003	-2.705 ***	-.001	-1.904 *
marital status	-.556	-3.094 ***	.027	1.176	-.005	-.253	.002	.136
nationality	.886	2.938 ***	-.128	-3.353 ***	.057	1.593	.050	2.377 **
education level	.082	6.750 ***	-.013	-8.462 ***	.007	4.956 ***	.003	3.405 ***
residency	.013	.110	.053	3.407 ***	-.071	-4.835 ***	-.004	-.522
language	.077	.555	-.057	-3.226 ***	.064	3.878 ***	.007	.723
R squared	.191		.276		.196		.030	
F	36.331 ***		58.759 ***		37.521 ***		4.827 ***	

Source: Swiss Household Panel (SHP)

*p<0.1, **p<0.05, ***p<0.01

Model 1

All variables but residency and language have a statistically significant ($p < 0.01$) influence on the total income of households. The highest is the gender variable, followed by the level of education; other variables have proportionally less influence. Being a woman, older and married impact negatively on the total income, while being Swiss and having a higher level of education has a positive influence.

The type of households with highest income is characterized as younger old Swiss single man. Higher level of education does also influence to a certain extent.

Model 2

All variables except marital status are statistically significant ($p < 0.01$). Again the gender variable, followed by the level of education has the strongest influence. Other variables like age, residency, nationality and language have less impact on the level of the 1st pillar pension. Being a woman, older and residing in the outskirts tend to show a higher dependency on the first pillar. By contrast, having a higher level of education, being Swiss national and speaking German¹⁷ as first language make households less dependent on the 1st pillar.

Households which are most dependent on the 1st pillar are older women, foreign national with lower education, residing in the countryside and not speaking German.

Model 3

In this model, five variables, gender, age, level of education, residency and language are statistically significant at a small p value ($p < 0.01$). Once more, the gender variable has the biggest influence, followed by educational level, residency and language. All these three variables are having round the same

¹⁷ The main group is (Swiss-) German speakers (65.3%), followed by French (22.4%) and Italian speakers (8.4%).

influence. Age has less influence. Older women with a lower level of education and residing in the countryside will have a relative smaller 2nd pillar. Speaking the language of the majority, i.e. German has a positive impact on the importance of the 2nd pillar.

Households composed of younger men with higher level of education and living in the cities have the highest relative level of 2nd pillar.

Model 4

This model is the most divergent in terms of statistical significance or influence pattern of variables. Only the level of education is statistically significant at $p < 0.01$. Nationality is statistically significant at $p < 0.5$ while gender, age variables are statistically significant at a higher p value ($p < 0.1$). Higher level of education and being Swiss has a positive impact on the 3rd pillar. Reversely, being a woman and older tends to make the 3rd pillar proportionally smaller. Households composed of younger Swiss men with higher level of education have the highest relative level of 3rd pillar.

Looking over models No. 1 to 3, those which are statistically consistent, gender is by far the most influential variable; level of education is second most influential, followed by age. Marital status, nationality, residency and language with similar level of influence are not statistically significant in each model, which makes difficult for a definitive statement. The residency variable would be worth a thorough research to determine if it should be considered as an influencing factor or, on the contrary, resulting from the level of income.

Wanner & Gabadinho (2008) list besides gender and familial structure, working activity, level of education, the canton of residence, nationality as correlated with poverty levels.

Guggisberg & Häni (2014) found that foreign nationals are more often poor than Swiss nationals (22.7% compared to 15.6%). They explained that there is a greater error margin, because only 10% of seniors are of foreign nationality. Considering AHV/VS pension paid solely to seniors residing in

Switzerland, only 24% of foreign nationals got a full 1st pillar pension, while 90.1% of Swiss nationals received the maximum pension (Méry, 2014). Guggisberg & Häni (2014) explained that situation by missing contribution years resulting in partial pension. D'Epinay et al. (1998) have observed that the foreign nationals' social structure tends to be predominated by men and single households.

4.4.2. Growing inequality

On 30 September 2014, Pro Senectute (2014) published an alarming report on old age poverty, since 2008 Switzerland counted 26,800 new poor seniors, making in 2013 a total of 185,770 recipients of supplementary benefits. Since the number of pensioners has also grown to reach 1,521,719 people, the percentage of old age receiving EL/PC remained stable at 12.2%. In parallel, the number of millionaires has also increased, meaning the disparity among old age people is growing. In 2013, according to self evaluation based on fiscal statistics, Pro Senectute considers that the number of old age millionaires has augmented from 109,837 (2008) to equal 139,743 in 2013, representing 9.2% of old age.

In 2013, the rate of AHV/AVS recipients who also benefited from supplementary benefits was 12.2%. For the same year 2013, 69,300 seniors of this category were residing in nursing homes or old age homes, which represented 50% of these institutions residents Portmann, (2014).

Table 4-14 EL/PC recipients compared to millionaire

Year	AHV/AVS pensioner	EL/PC beneficiary	%	millionaire	%
2008	1,359,665	158,969	11.7	109,837	8.1
2009	1,399,862	164,078	11.7	121,121	8.7
2010	1,428,961	168,206	11.8	126,506	8.9
2011	1,452,579	175,671	12.1	130,159	9.0
2012	1,486,872	181,493	12.2	134,950	9.1
2013	1,521,719	185,770	12.2	139,743	9.2

adapted from Pro Senectute (2014)

Since the SHP data does not provide a distinct variable for the EL/PC, the variable H13I76A (financial subsidy for health insurance) was selected as a substitute. The calculated 10.7% is slightly lower than the 12.2% EL/PC recipients mentioned by Pro Senectute (2014).

Table 4-15 Frequency of health insurance subvention

	living alone		living as couple without children both retired		living as couple without children one retired		total
	men	women	men	women	men	women	
N	9	58	6	8	6	1	88
%	10.1%	16.3%	4.2%	6.5%	7.6%	5.6%	10.7%

Source: Swiss Household Panel (SHP)

With 10.7% for the sample, health insurance subvention can be considered as a valid substitute for the EL/PC frequency.

5. Conclusion

The current study aimed, firstly to describe Switzerland's three pillar pension system, as well as to provide a historic-political context of its inception. Secondly to evaluate the effect of the Swiss pension system on efforts to reduce old age poverty. Thirdly to measure the contribution of each pillar, public, occupational, individual pensions in the total effect of the pension system. And finally to determine influencing factors on the proportion of benefits from each pillar.

5.1. *Summary of findings*

Switzerland is a model, not for the level of benefits, or alleviation of old age poverty (level of benefits) but for its financial sustainability (Finke, 2014; Pascuzzo, 2014).

Armingeon & Beyeler (2004, p. 139) after classifying Switzerland as a liberal welfare state until World War II, time when the AHV/AVS insurance was conceived, labeled the Swiss three pillars as follows, the 1st pillar is social democratic, the 2nd pillar is conservative, and the third pillar is liberal.

Considering the different types of households, singles in general, men and women are more at risk of poverty than couples. Secondly, women living alone are the group with the highest risk of old age poverty. Among couples, couples with children are not facing higher risk of poverty compared to couples without children. Through all poverty levels, that group has the lowest rate of poverty, but at the SKOS/CSIAS absolute minimum level, it ranks highest with 1.9%. However, only 6 households were under that income limit, and the category 'couples with children' composed half of it. Having a partner still in active life does not have positive impact on poverty risk. Women in the category 'couples, one retired' experience a higher poverty rate compared to 'couples both retired'.

Regarding income, people from the lowest quintile depend primarily on the public pension for their retirement living. The second pillar and other categories represent less than 10% of their total income. In higher quintiles, the second pillar is gaining gradually more importance and represents the highest source of income in the 5th quintile.

The figure 4-10 representing mean income, not median, reveals that each category of low earners (below FSO level) has a small part of their income coming from work, except for women in couples with a pensioner. The first pillar is the main source of income, reaching 90% level and over. On the total sample income, mean graphic (figure 4-10) it is visible that women are more dependent than men from the public pension; the corollary is smaller occupational pension, in almost all type of households.

Different linear regressions conducted on the sample 2 and their analyses could explain that the 1st pillar contributes for roughly 62% to old age income, while the part of the 2nd pillar was of 26%. No conclusive deduction could be stated about the 3rd pillar.

5.2. *Research implications*

Based on previously mentioned research findings, this section will discuss implications for old age pension policy.

5.2.1. Recommendations

There are various ways to reform a pension system in order to decrease old age poverty. Many countries are facing a social demographic change, an ageing of their society. At the same time, they are also facing threats on the financial sustainability of their pension system and popular opposition to pension reform. Ultimately, engaged reforms are not purely rational or actuarial but rather political, with more or less acceptance from the population. Recommendations mentioned in this section will be limited to technical aspects and will not touch social or political dimensions of policy.

With the first revision of the BVG/LPP, the Swiss government decided to expand the 2nd pillar by including more low income earners in the occupational pension scheme. Another way favoured by Bianchi & Aregger (2012) is to improve the level of benefits of the 1st pillar, which would imply higher labour social contributions or higher VAT rate. Currently the maximum AHV/AVS pension represents about 77% of the 50% median income.

Another improvement would be the narrowing of the pension gender gap, which is a direct reflection of wages disparity and labour market conditions. A pension reform cannot alleviate gender disparity fully as long as the labour market discriminates against women during their active life.

The 3rd pillar, an individual private pension fits nicely in a theoretical model. However empirical experience demonstrates that only those who gained sufficiently throughout their active lives were able to put aside money for a third pillar. While the lowest earners are excluded from that pillar, the better off pay less taxes due to the fiscal incentivizing measures. One possibility could be to suppress that fiscal advantage and to redistribute that collected tax to the lowest earning pensioners.

Possible policy recommendations could be to expand the quasi universal first pillar, in order to better protect the population with low second pillar or no second pillar at all. Low wage, part time workers and women would be primarily concerned.

5.2.2. Contributions to Korea

Korea already applies a multipillar pension system, namely a four pillars system with a basic old age pension as 0 pillar, and the public occupational plans overlap between the 1st and 2nd pillars (Kim, 2011). However the Korean multipillar system is described as not mature or stable and facing several challenges, like the financial sustainability of pension funds, or the improvement of the National Pension Scheme coverage. Thus, it is a difficult exercise to

present possible contributions from the current study based on the Swiss three pillar system.

One of the explored ways by the Korean government, to ensure financial stability of pension funds has been to reduce the coverage rate of old age pension or to decrease the replacement rate (down to 40% in 2028). However this strategy entails a risk of higher rate of old age poverty, which is not really traded off by the recent introduction of the basic old age pension, considered by some as social assistance. Ideally the 1st pillar should provide benefits equal to the 50% median income, or at least not too far below this level.

Retirement fund portability is an essential aspect for the insured person, maybe less from an employer perspective. In the 1st pillar, Switzerland achieved that key point with a universal public pension, in the domain of the 2nd pillar, a remedial law; the Free Transfer in Occupational Pensions Plan (FZG/LFLP) was introduced ten years after the introduction of the compulsory BVG/LPP. Before 1995, “golden chains” were often mentioned as a brake to job mobility. Then, full retirement fund portability in both the 1st and the 2nd Korean pillars could help workers to be more mobile and take advantage of more professional opportunities.

The development and strengthening of a 3rd pillar will not avert old age poverty in the class of low income earners, but rather in the middle class. Thus, depending on the socio-economic structure of the Korean society, to develop a 3rd pillar in Korea could make sense and be effective. Low levels of government trust could also be an important factor pushing people to rely less on the state and seek more for individual solutions.

5.3. *Limitations of the study*

This study on the Swiss three pillar pension system, based on an empirical analysis of the SHP data beholds quite many limitations.

The usable size of the sub-sample remained above a thousand participants, but in some groups the number of positive hits was simply too low

to be of any relevancy. The decrease in size of the sample, starting from 2009 and finishing with 1087 participants, raises questions about the representativeness and consistency of the final sub-sample and the legitimacy of inferences for some cases, e.g. poverty level at SKOS absolute minimum level for women living in couple with a non retired partner.

As the SHP targets private households of all age classes, and as topics include expenses as well income and social life, the section reserved for the income structure was fitting more active people. With income structure of old age as main study topic, following variables could have offered a basis for more in depth and thorough analysis: - distinct supplementary benefits, not included with AHV/AVS, - capital or fortune possessed by households members, - a specific 3rd pillar variable, - regarding the 2nd pillar, not only pension amount received, but the virtual amount related to the minimum compulsory BVG/LPP benefits, also known as shadow plan values. This would allow a study on the theoretical or minimum legal model of the 2nd pillar and not on the more generous 2nd pillar practiced by employers and employees.

Like most households surveys, the SHP also excluded old age people residing in nursing homes or old age homes, which is a drawback when the study focus on old age population. With ageing societies, the number of older old living not anymore at home but in common home settings can only increase. Another limitation is due to the political design of Switzerland, federalism allows a large diversity of fiscal systems and tax levels. Similar to many countries the cost of living can vary greatly between regions. Besides health insurance premiums, not only depends on canton residency, but also on the type of municipality: city, suburb or countryside. In order to obtain a comprehensive understanding of old age poverty in Switzerland a large amount of data would be needed, not solely limited to income.

In conclusion, all these mentioned limitations restrict the significance of the research, but as an academic study with no further pretensions they seem

acceptable. The only recommendation which could be given for further studies would be to design a survey specifically for retired people.

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스위스 연금급여의 적절성

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스위스 연금체계에는 두가지 확실한 모순이 존재한다. 먼저, 한 쪽에서는 스위스의 3층 연금 체계가 세계적으로 모범적인 모델로서 소개되고 있다. 1994 년, World Bank 는 유명한 연구보고서 “Averting the Old Age Crisis” 를 통해 네덜란드와 스위스를 성공적 사례라고 언급하며, 3 층 구조의 연금체계를 지지하였다. 2012 년 노인빈곤률이 15.8%였던 스위스 정부는 그들의 연금정책이 효과적이라고 판단하였고, 빈곤정책을 운영하는 과정에서 노인들을 우선적 서비스계층(가령, 한부모 가정과 같은)에도 포함시키지 않았다. 다른 쪽에서는, 국제적 비교에서 2010 년 스위스는 21.8%의 노인빈곤율을 나타내며(기준중위소득 50%), OECD 평균인 12.8%를 훨씬 웃도는 결과를 보여주었다. 2013 년에 스위스는 EU 28 개국의 노인빈곤율 평균인 18.3%보다 높은 29.6%(기준중위소득 60%)의 노인빈곤율을 기록하기도 했다.

스위스는 다층연금체계를 발달시키고, 시행하는데 있어서 세계적으로 선구자적인 나라 중 하나로 손꼽혀왔다. 다시 말해, 국가연금체계(1 층), 직장연금(2 층), 그리고 개인연금(3 층)으로 이루어진 3 층체계를 도입해왔던 것이다. 이러한 3 층체계의 개념은 1972 년 국민투표 이후, 연방헌법에 명시되기 시작했으며, 은퇴 가입자들을 위한 적정수준의 삶의 유지 혹은 장애와 사망에의 대비를 목적으로 한다.

스위스 연구자들 사이에서도 노인빈곤에 대하여 일치된 결과를 나타내는 경우는 많지 않다. 연구들에 의하면, 낮게는 3%에서

높게는 16%까지 다양한 수치의 노인빈곤관련 결과들을 제시하고 있으며, 이런 다양한 관점들이 각기 다른 정치적 입장을 제도(提導)하기도 한다. 스위스 경제상황을 다룬 Wanner & Gabadinho 의 연구를 보면, 2008 년 은퇴한 연금가입자의 대부분이 재정적 안전을 경험하였고, 다만 6.6%만을 빈곤으로 간주하고 있다. 이들은 스위스 정부의 입장과 같이, 노인들을 빈곤방지정책을 펼치는 데 있어서, 우선적 서비스계층으로 포함시키지 않았다.

스위스의 다층연금시스템의 전체적 성공에 대해서는 별다른 논쟁이 없었음에도 불구하고, (국제적인 비교에 있어서) 높은 수준의 노인빈곤율은 스위스 모델이 과연 적정한 것인지에 대한 질문을 불러일으킨다. 이에, 스위스가구패널(SHP) 데이터를 활용하여, 노인빈곤을 줄이는 연금체계 효과를 밝히고, 연금체계에 있어 각 층의 기여도를 측정하는 탐색적 연구를 진행하였다. SHP는 1999년에 만들어진 스위스 인구패널의 종단데이터로서, 2013년 기준으로 4,467가구와 10,575명의 가구원 데이터를 포함한다. 하위샘플로는 64세 이상의 여성과 65세 이상의 남성이 선택되었으며, 기술통계, 간단한 그래픽 분석과 선형회귀분석으로 구성된 양적연구가 진행되었다.

주요 연구결과는 다음과 같다. (샘플의 기준중위소득 50%를 기준으로) 28.4%의 노인들이 빈곤한 것으로 나타났고, 스위스 통계청이 정의하고 있는 절대적 빈곤수준에 이르는 노인비율 또한 8.3%로 관찰되었다. 2층체계(직장연금)가 노인소득의 26% 정도밖에 기여하지 못하는 것에 비해, 1층 체계(국가연금)는 노인소득의 62% 수준의 기여를 하고 있었다. 낮은 수준의 2층체계를 갖거나, 혹은 1층 외의 다른 체계는 마련되어 있지 않는 국민들을 더 제대로 보호하기 위하여, 보편적인 1층 체계를 확대 및 강화해야 하며, 낮은 임금수준, 시간제 일자리 그리고 여성은 우선적으로 고려될 필요가 있다.

주요어: 3층체계, 국문요약 노령연금, 직장연금, 개인연금, 노인빈곤, 스위스
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