

National report - Croatia

ETUC SociAll Project

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Executive Summary

The overall objective of this report is threefold. First, to analyse the existing pension system in Croatia. Second, to outline the main challenges in the pension system and third, to provide an explanation of the reform pathways proposed by the trade unions.

The main challenges outlined in the Report are summarised in the following 5 points:

- High share of privileged pensions that were not “earned” through payment of contributions, and the benefits of which are significantly higher than those determined under general conditions (the number of privileged pensioners amounts to 178.233, which represents 14.4% of all pensioners);
- Early retirement and low participation of older workers in the labour market, with employment rate of older workers (55-64) being among the lowest in EU (in 2019 this rate was at 43.9%, 52.6% for men and 35.9% for women, and a share of early retirees is 39.9%);
- Adequacy - pensions currently amount to 39% of late-career work income according to the average replacement ratio data for 2019 (41% for both men and women); net pension wealth at individual earnings equal to average worker earnings is 9.5 times annual individual net earnings for both men and women (for a comparison this number in Luxembourg is around 21.4);
- The gaps in formal coverage - the growing number of non-standard workers where young people are more affected, as they are more likely to work in atypical jobs (56.7.% of those aged 15-24 work at atypical jobs); the spread of flexible forms of employment combined with weak rule of law;
- Gender gap in employment and wages (in 2018 women's gross hourly earnings were on average 10.5 % below those of men); the level of pensions which are generally low due to wage levels, contribution levels (one of the lowest in Europe), as well as by an unfavourable system of indexation (which is often changed).

As the main proposed solutions by trade unions we outline the following:



- pensions that are not earned through work need to be separated and financed from the general taxation;
- the current second pillar needs to be reassessed, and the effects of its introduction analysed and discussed;
- increasing the duration of working life cannot be achieved by solely raising the retirement age and/or imposing the penalties for early retirement, but to act on all relevant factors that improve working: health, financial and other factors;
- policy makers should first implement reforms in the domain of labour market (e.g. to enable workers to stay longer in the labour market through stimulating those employers who keep them longer, or through higher pension delay bonuses; and by increasing the participation in adult education);
- the share of the grey economy in GDP needs to be decreased.
- pension system and its reforms should include the European Pillar of Social Rights and the recent European Council's Recommendation on Access to social protection for workers and the self-employed, especially for precarious workers, the share of which is currently the largest in the EU (6.1%, relative to the 2.2% which is the EU28 average) (e.g. discussing new sources of income for future pensions, which is in the long term the key challenge, which must be addressed by the pension reform);
- decreasing the gender pay gap.

1. The Country Context

In Croatia, the pension system is part of the general social security system which is based on social insurance (i.e. pension, health and unemployment insurance), social assistance and family benefits. The key institutions responsible for social security system are the following¹: The Ministry of Labour, The Pension System, Family and Social Policy, The Ministry of Health, Croatian Health Insurance Fund (HZZO), The Croatian Pension Insurance Institute (HZMO), Croatian Employment Service (HZZ), Central Register of Insured Persons (REGOS).

Pension structure

The pension system is based on three pillars: (1) mandatory pension insurance based on generational solidarity; (2) mandatory pension insurance based on individual capitalised savings and (3) voluntary pension insurance based on individual capitalised savings. Within the **first pillar** insured persons pay contributions for pension insurance, while these contributions then serve as pensions to current pension beneficiaries. Besides the contributions, the first pillar is also funded from the government budget. The rights provided on a mandatory basis cover old-age pension, early retirement pension, disability pension, temporary disability pension, survivors' pension, minimum pension, basic pension, occupational rehabilitation, compensation for physical damage, and reimbursement of travel expenses in relation to

¹ Besides them, there is also a large number of administrative units on local and regional levels; agencies; pension funds etc.



exercising insured rights². The first pillar is managed by the Croatian Pension Insurance Institute (HZMO). The **second pillar**, which is based on the individual capitalised savings, involves mandatory pension funds and it is compulsory for all employees and the self-employed born in the year 1962 and later. The pillar was introduced in 2002, and it covers the risk of old age, as well as the risks of disability and death if the fund member is older than age of 55, if the membership is longer than 10 years and if the amount of disability or survivors' pension from two pillars would be higher than the amount from the first pillar only³. The second pillar is regulated by the Act on Pension Insurance Companies⁴ and the Act on Voluntary Pension Funds⁵. The pension regulation amendments from 2019, allow those born in 1963 and later to opt out from the 2nd pillar. The **third pillar** of pension system constitutes voluntary pension insurance and implies individual savings in voluntary pension funds of open-ended or closed-ended type. Precisely, open-ended pension funds are open for membership to any natural person interested in becoming a member, whereas closed-ended pension funds form their membership out of natural persons who are either employed with an employer, or are trade union members, members of associations of self-employed persons or self-employed persons. The Croatian Financial Services Supervisory Agency (HANFA) is the financial supervisory body of the second and third pillars of pension insurance. In addition, the Central Register of Insured Persons (REGOS) is the competent institution for insurance based on individual capitalized savings⁶.

The formal and effective coverage

Right to an old-age pension depends on age, gender and the length of qualifying period. It is provided to economically active persons, including employees, civil servants, self-employed persons and farmers, when they stop their professional activities. The rights provided on a mandatory basis cover old-age pension, early retirement pension, disability pension, temporary disability pension, survivors' pension, minimum pension, basic pension, occupational rehabilitation, compensation for physical damage, and reimbursement of travel expenses in relation to exercising insured rights⁷. As already mentioned, persons that are compulsory insured in 1st pillar are also self-employed persons who, in accordance with special regulations, follow their professional activity (e.g. attorneys, physicians, artists, journalists...)⁸.

² Pension Insurance Act (<http://www.mvep.hr/files/file/dokumenti/prevodenje/zakoni/zakon-o-mirovinskom-osiguranju-nn-157-13-eng.pdf>)

³ The Ministry of Labour, Pension System, Family and Social Policy&HZMO (2019). Croatia Country fiche on pension projections prepared for the Economic Policy Committee

⁴ Pension Insurance Act (<http://www.mvep.hr/files/file/dokumenti/prevodenje/zakoni/zakon-o-mirovinskom-osiguranju-nn-157-13-eng.pdf>)

⁵ Act on Voluntary Pension Funds (<http://www.mvep.hr/files/file/dokumenti/prevodenje/zakoni/zakon-o-dobrovoljnim-mirovinskim-fondovima-nn-19-14-eng.pdf>)

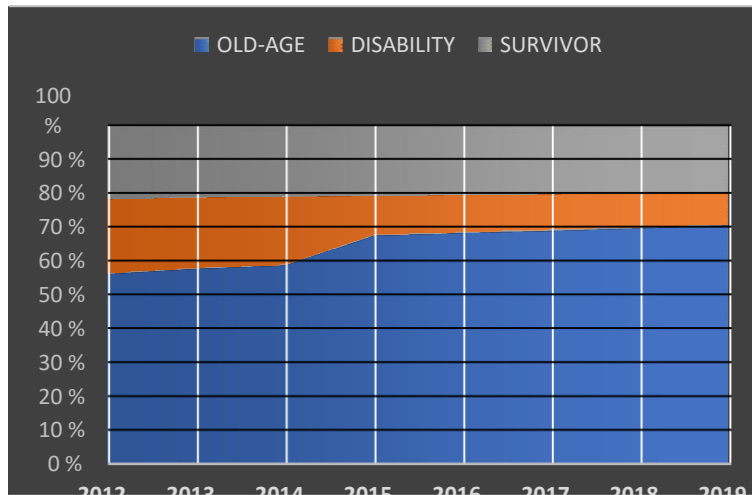
⁶ HANFA (<https://www.hanfa.hr/pillar-ii-and-iii-pensions-and-pension-payments/>)

⁷ Pension Insurance Act(<http://www.mvep.hr/files/file/dokumenti/prevodenje/zakoni/zakon-o-mirovinskom-osiguranju-nn-157-13-eng.pdf>)

⁸ Pension Insurance Act (<http://www.mvep.hr/files/file/dokumenti/prevodenje/zakoni/zakon-o-mirovinskom-osiguranju-nn-157-13-eng.pdf>)



Slika 1. Figure 1. Pension beneficiaries by type (share in total number)



Source: authors compilation based on HZMO data.

In addition, unemployed persons are covered by mandatory insurance under conditions and length of periods of time as established by employment regulations. However, self-employed, even those who can be considered proper entrepreneurs, are often avoiding to pay pension contributions (registering themselves on minimal salary). Figure 1. shows the share of beneficiaries of old-age, disability and survivors' pensions

in the total number of beneficiaries, based on the rights from Pension Insurance Act (2012 – 2019). We can see that the largest share is in the category of old-age pensions (71% in 2019). A person is entitled to an old-age pension when he/she has completed a minimum period of insurance which is at least 15 years for both men and women; and when the age of 65 (for men) and 62 years and 6 months (for women) is reached (data for 2020). Retirement age for women is being gradually raised, i.e. by 3 months every year, from 2020. Effective retirement age is usually lower than the legal one, and according to 2018 data for Croatia it amounted to 61.7 for men, and 61.1 for women. If a contribution period is larger than 41 years, it is possible to retire at the age of 60 for both men and women without decreasing the pension benefit⁹. At the age of 60 (for men) and 57 years and 6 months (for women), a person is entitled to an early old-age pension, under the condition of completing at least 35 years (for men) or 32 years and 6 months (for women) of qualifying period. Minimum conditions for women and men will be equalised in 2030¹⁰. In case of early retirement, the pension benefit linearly decreases by 0.2% per month of anticipation (2.4% per year, 12% for the maximum of 5 years). Survivors category is the second largest category, amounting to the 19% in 2019, and it is provided to family members of the deceased person if the deceased was a pension beneficiary, a beneficiary of occupational rehabilitation or an insured person who had completed a 5-year insurance period or 10-year qualifying period. Finally, the share of disability pension beneficiaries records a decrease in the observed period and amounts to the 10% of total beneficiaries. Disability pensions are provided on condition that the insurance period is equal to one third of working life.¹¹ To qualify for a disability pension, changes in health must occur before the age 65. In the case of partial incapacity, the benefit is lower than in the case of total

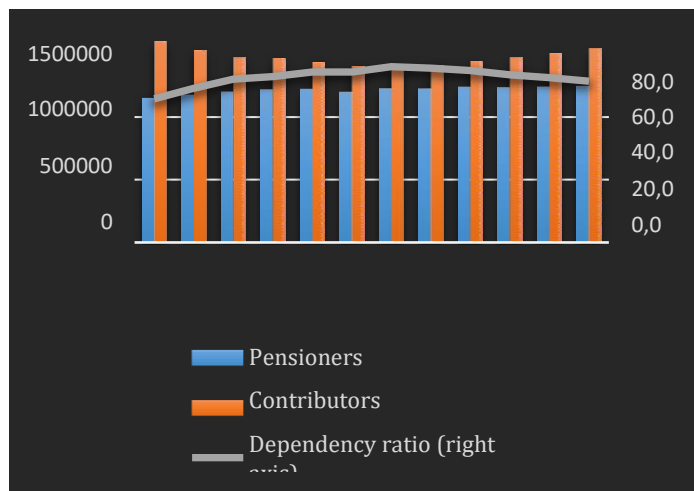
⁹ HZMO, <https://www.mirovinsko.hr/hr/starosna-mirovina/166>

¹⁰ HZMO, <https://www.mirovinsko.hr/hr/prijevremena-starosna-mirovina/168>

¹¹ Working life is the full number of years between the age of 20 (23 for persons with post-secondary education and 26 for persons with university degree) and the day of the contingency that caused disability.



Figure 2. Pensioners, contributors and dependency ratio (2008 – 2019)



Source : authors compilation based on HZMO data.

Since 2010, dependency ratio records values higher than 80 percent, but with a decreasing trend since 2014 which was a peak year. At the end of 2019, the first pillar had 1.545192 contributors and 1.241111 million pensioners, and a dependency ratio amounted to 80.3% (Figure 2).

Types of pensions under 2nd pillar are old-age pension, or an early retirement pension; disability pension; and survivors' pension. The pensions also differ from the aspect of type of pension: a single pension; a joint pension payable to a pension beneficiary or to his/her surviving spouse for life; a single pension with a guarantee period that is payable to a pension beneficiary and that continues, if the pension beneficiary dies before the guarantee period expires, to be payable to a designated beneficiary for the remainder of the guarantee period; and a joint pension with a guarantee period that is payable to a pension beneficiary or to his/her surviving spouse for life, and, should both spouses die within the guarantee period, to the designated beneficiary for the remainder of the guarantee period. At the end of 2019 there were total of 40 pension funds (12 mandatory pension funds, 8 open-ended voluntary pension funds and 20 closed-ended voluntary pension funds). The number of individual accounts within the second pillar is growing, and the number amounted to 2,010,403 at the end of 2019. Further, there were around 320,533 members of open-ended funds and 44,569 members of close-ended funds. The coverage of open (i.e. personal) pension funds is estimated at 12.1% of the population aged 15-64, and the coverage of closed (i.e. occupational) pension funds at 1.7%. Finally, net assets of voluntary pension funds were HRK 6.2 billion at the end of 2019, i.e. 5.5% of net assets accumulated in the mandatory pension funds (which is HRK 112.6 billion)¹². Although the voluntary coverage (i.e. third pillar) is in place, it is very rare, since the average or below-average wages cannot afford it. Besides missing the financial capacity to save in voluntary schemes, the problem here is the general lack of trust in the pension system as such among younger generations. Finally, private occupational pension schemes are non-existent. According to trade unions, this kind of system should have been introduced instead of the private individual capital savings (the current second pillar).

¹² ll data are available at HANFA.



Pension Finance

The Croatian pension system was designed during the communist period, as a PAYG system financed by contributions from salaries. Despite the reforms implemented since the mid-1990's, this still remains the heart of the system. In the late 1990's the system was partially privatised, and the implementation of changes that resulted from this process started in the early 2000s by re-directing 25% of the pension contribution (or 5% out of the total contribution of 20% of the wage) to individual capitalised accounts of insured persons. The Contribution Act¹³ prescribes the requirement of paying the contributions for funding of obligatory insurance, including contributions for pension insurance. The contribution rate for insured persons who are insured only in the 1st pillar amounts to 20 %, while the contribution rate for the insured persons in 1st and 2nd pillar is divided (15% to first and 5% to second pillar). Next to contributions, the first pillar is financed also by the government budget. Additional contributions are paid by employers for employees in arduous and hazardous occupations. These contributions are paid by employers at rates from 4.86% to 17.58% of the gross wage, i.e. contribution rates for such occupations are higher than the standard rate. If a person is insured in both the first and second pillars, these contributions are also divided between two pillars. If a person works in an arduous or hazardous occupation, he/she can retire earlier without a decrease in pension benefit¹⁴. Persons who had not worked and paid contributions and did not obtain pension rights, do not receive a pension. Their number is estimated at around 60,000 people older than 65 years (around 12% of old-age pensioners)¹⁵.

The rate of contributions for persons insured in the 2nd pillar amounts to 5% of the gross salary, whereby insured persons may themselves choose a compulsory pension fund and compulsory pension fund category to which they will contribute this amount, and it is financed also by rates of returns. Finally, the third pillar is financed by premiums of insured persons. Contributions paid into statutory pension schemes are tax-exempt, while pension payments are taxed. Contributions paid into voluntary pension schemes are taxed, with the exception of employers' matching contributions. Third-pillar pensions in payment are tax-exempt¹⁶.

Old-age and early pensions from the first pillar of pension insurance are calculated on the basis of the annual wage relative to the national annual average wage of all employed persons. Precisely, pension benefits paid by the public PAYG scheme (1st pillar) are determined by a point system, with certain differences in pension formulas for those that are insured only in the first pillar and those who retire in both mandatory pension pillars. Box 1 contains the general formula for pension benefits, minimum old-age pension formulas and a pension formula for insured persons in the 1st and 2nd pillar. The pension factor in the general formula

¹³ The Contribution Act (<https://zakon.hr/z/365/Zakon-o-doprinosima>)

¹⁴ The Ministry of Labour, Pension System, Family and Social Policy&HZMO (2019). Croatia Country fiche on pension projections prepared for the Economic Policy Committee.

¹⁵ Union of Croatian Pensioners

¹⁶ Pension Adequacy Report 2018.



is set at 1.0 for both old-age and early retirement pensions, while the pension factor for disability pensions equals 1 in case of total disability; 0.8 in case of partial disability and unemployment and 0.5 in case of partial disability, if the person is employed or self-employed. The actual pension value is determined by the Croatian Pension Insurance Institute (HZMO)

Box 1. Calculation of pensions

The general pension formula: $PB = \text{personal points (PP)} \times \text{pension factor (PF)} \times \text{actual pension value (APV)} \times 1.27$, where $PP = \text{insurance period (IP)} \times \text{average value point (AVP)} \times \text{initial factor (IF)}$.

A minimum old-age pension formula: $MP = \text{insurance period (IP)} \times \text{initial factor (IF)} \times \text{pension factor (PF)} \times \text{actual minimum pension value (AMPV)}$

A pension formula for insured in the 1st and 2nd pillar: $PB = \text{personal points (PP)} \times \text{pension factor (PF)} \times \text{actual pension value (APV)} \times 1.2025$; where $PP = \text{insurance period (IP)} \times \text{average value point (AVP)} \times \text{initial factor (IF)} \times \text{basic pension factor (BP)}$

biannually, and at the end of 2019 it amounted to 67.97.

The minimum pension is guaranteed from the first, but not from the second pillar. Contrary to the general pension formula shown above, in the formula for the minimum pension, previous earnings are not

considered and there is no pension supplement for

minimum pensions. Finally, for those insured in the 1st and 2nd pillar, for the insurance period prior to the introduction of the second pillar (i.e. before year 2002), the pension benefit paid by the PAYG scheme is determined in the same way as in general pension formula above. For insurance periods after year 2002, the pension benefit paid by the PAYG scheme is calculated by applying the point formula which uses the pension supplement of 20.25% (i.e. 27% x basic pension factor) and with personal points multiplied by the basic pension factor of 0.75. This basic pension factor is calculated as an average share of the 1st pillar contribution rate in the total contribution rate, and currently, this factor equals 0.75.

Pension Trends, Current Reforms and Trade Unions Role

The specificity of the Croatian pension system is that it has experienced many reforms in the past: one systemic reform (in the 1998-2002 period) and frequent parametric reforms. Despite the complexity of the entire system, there are no special procedures for involvement of the social partners in governance of public pensions, besides those otherwise used for the tripartite social dialogue. The examples are discussions regarding the draft laws within the Economic and Social Council, and possibly participation of social partners' representatives in working groups. In general, Governments that were in office since 2010, were not interested in any considerable dialogue with the social partners on the pension reforms they planned to undertake. In both episodes of substantial reforms (in 2013 and 2018), the Governments discussed already drafted laws with the social partners only for formality reasons. In these cases, reform details were elaborated beforehand, and any discussions within tripartite social dialogue did not influence their final form. The most recent reform was in December 2018, when the parliament adopted a pension reform package, that came into force in 2019. In this process, the Government planned a marginal role of trade unions. A new Pension Insurance



Act was drafted by the Ministry of Labour and the Pension System and was submitted to trade unions for comments. As one of its elements was increase of the retirement age, the reform was met by strong resistance from the trade unions. Trade unions collected enough signatures for a referendum. As a result, in October 2019, the Government adopted amendments by which the retirement age was lowered to 65 years, penalisation for early retirement was decreased to 0.2% per month of anticipation (from 0.3%) and the acceleration of the equalization of retirement age for men and women was abolished. These amendments reversed features of not only the 2018/2019 reform but also the elements of 2014 reform when the retirement age was set to 67 years¹⁷. Thus, despite marginalisation, in the end the trade unions' role was a major one, as they managed to force the Government to accept their demands, and the Law, with accepted amendments, has been in force since January 2020.

Section 2. The Challenges

The frequent and often contradictory reforms implemented in Croatia so far have failed to achieve a balance between adequacy and long-term sustainability, which will be evidenced by the available data in this section¹⁸. Thus, the main goal is to highlight key difficulties regarding the pension coverage and adequacy. With this goal in mind, data and evidence that are included in the analysis contain (among others): poverty among the elderly, especially women; the gender pension gap; inadequate pension provision; risk of old-age poverty...). The discussion in this section is predominantly based on the results of the survey conducted with Croatian trade unions.

During the last 25 years there was a large number of smaller interventions in the system, which was detrimental for its effectiveness. The only substantial structural reform was introduction of second pillar (individual capitalised savings) based on the World Bank model. While the legal changes were introduced in 1998, the reform itself started to take effect in 2001. Trade union assessment of this particular reform is negative, as it has negatively affected sustainability of the public pension system, while not providing higher retirement rates, except for high-earners. Thus, the general perception is that the developments in the pension system are shaped by the unsuccessful economic transition, including weak and inefficient institutions and crony capitalism as well as the predominance of neoliberal economic policies.

The pension system debate, both by politicians, experts and the media, is always heavily dominated by the financial sustainability issue and less by adequacy which is a more severe problem. There is also no institutional reference or definition of adequacy that is used as a standard in this country. Further, the issues of coverage and effectiveness are rarely raised, except by the trade unions.

¹⁷ Croatia progress report 2020

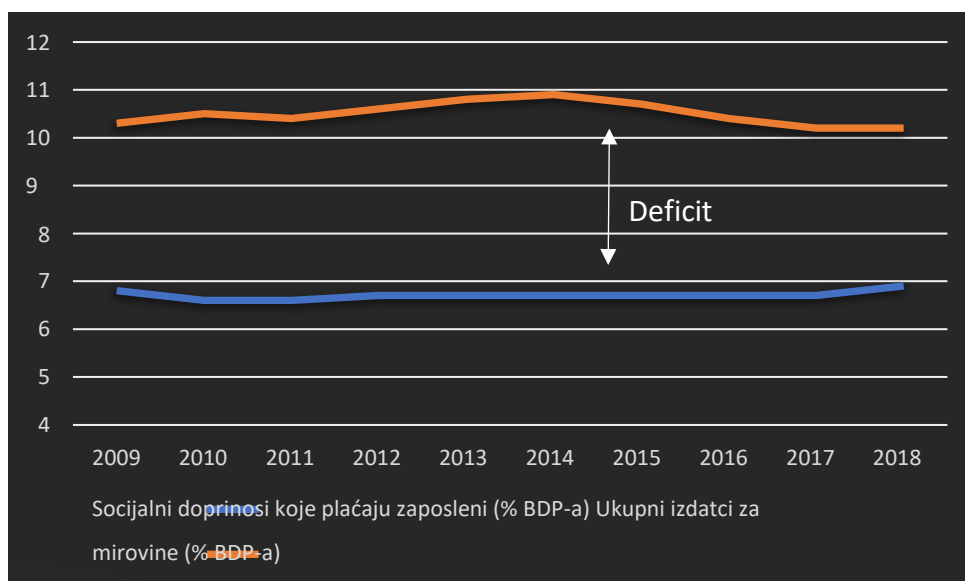
¹⁸ This is repeatedly stressed in reports dealing with pension system in EU members, including Croatia (such as Pension Adequacy Report).



Financial sustainability

First, regarding the sustainability issue, according to trade unions, the Croatian pension system is much more sustainable than presented by politicians. Figure 3 shows the contributions and expenditure on pensions (as a share of GDP), as well as the resulting deficit. In the observed period (2009-2018), the average pension deficit amounted to 3.8% of GDP, or 13 bn HRK. Although significant, trade unions frequently stress that this deficit was artificially created by including the privileged pensions in the general system and by refusing to acknowledge the existence of the transitional cost of the partial privatisation of the system. There is a prevailing perspective that the privileged pensions, as being the pensions that were not “earned” through payment of contributions, should therefore not be financed by them. Another issue is that privileged pension benefits are significantly higher than those determined under general conditions, thus contributing to the already rising inequality in the society. These pensions are related to police and military personnel, members of Parliament, government officials, Constitutional Court judges, Homeland War Veterans (HWV), academics, veterans from the World War II, and former political prisoners. At the end of the 2019, the number of privileged pensioners amounted to 178.233 (which represents 14.4% of all pensioners).

Figure 3. Social contributions and public expenditures on pensions (% of GDP)



Source: author's calculation based on Eurostat data.

Further, pressure on the sustainability stems also from the early retirement which is recognised as a key cause of the low participation of older workers in the labour market. Although the employment rate of older workers (55-64) records a steady increase from 2014, it remains among the lowest in EU (in 2019 the rate was at 43.9%, 52.6% for men and 35.9% for women). In 2019, 39.9% of beneficiaries were early retirees, but the average age of both women and men who retire early is increasing (Table 1).

Table 1. Early retirement statistics

	Men			Women		
	Number of beneficiaries	Average pension benefit	Average age	Number of beneficiaries	Average pension benefit	Average age
2010.	53655	2.452,63	64 09	52255	2.070,53	59 05
2011.	61147	2.433,01	65 03	58594	2.053,69	60 01
2012.	68475	2.457,39	65 09	64317	2.079,23	60 08
2013.	76228	2.571,93	65 11	70478	2.133,74	61 02
2014.	83340	2.531,44	66 06	77034	2.125,42	61 09
2015.	88178	2.516,57	67 00	82537	2.125,82	62 04
2016.	92340	2.529,79	67 07	87591	2.143,46	63 00
2017.	95018	2.592,41	68 02	91571	2.202,76	63 08
2018.	97427	2.698,44	68 10	96065	2.292,77	64 04
2019.	99320	2.802,04	69 05	99712	2.402,26	65 00

Source: HZMO.

However, existing research shows that these numbers must be interpreted taking into consideration not only the available financial incentives for retirement, but also the poor health of workers, inadequate skills, and low quality of working life¹⁹. Acknowledging the complexity of not only the issue of early-retirement but also the legal retirement age, trade unions strongly opposed recent reform which aimed to increase the retirement age, insisting that such an administrative measure cannot by itself change the fundamentals of the labour market and pension system (i.e. make more people work, if there are not enough jobs nor employers who want to retain older workers). They also warned that the majority of those who retire early don't do this through their own choice, but because they cannot keep their job, nor employers are directly stimulating them to do so. Thus, they should not be further penalised as the general level of pensions is already quite low. Trade unions think that the idea of raising the retirement age, being such a simple one to be implemented and popular with the European Commission, is likely to resurface again at some point in the future, but probably not during the next 4 years. Thus, in dealing with these aspects of pressures on financial sustainability, policy makers should first implement reforms in the area of the labour market. Trade unions do not see issues for fiscal sustainability of a system and highlight that there is a problem regarding the redistribution of overall social wealth. In other words, the Croatian economy is capable of financing a more generous pension system than the current one, but that it requires combating the grey economy, corruption, tax evasion and the introduction of more fair tax system.

¹⁹ M. Bađun i Š. Smolić, "Predictors of Early Retirement Intentions in Croatia", *Društvena istraživanja*, vol.27, br. 4, str. 671-690, 2018. [Online]. <https://doi.org/10.5559/di.27.4.05>



Adequacy (or social sustainability)

Second, as already noted, adequacy is a grave problem (more so for every further generation of pensioners), while coverage will be growing problem in the future (i.e. for those born after 1980). Policy debates on improving pension adequacy in general, focus on three issues. First, on the introduction of a 27%-pension supplement also for two-tier pensioners. There are dissenting opinions on the issue, drawing attention to the fact that the proposal should be considered in the context of previous 'basic pension' formula increases, as well as arguments of fairness, and relating to the long-term financial availability of such a measure. Second, the Union of Croatian Pensioners advocates the introduction of a 'social pension' aimed at older people without the right to a pension. Thirdly, the Union of Croatian Pensioners has called for the abolition or reduction of the statutory funded pillar so as to leave more resources for current pensioners, thus opposing the systemic reform implemented so far²⁰. Pensions currently amount to 39% of late-career work income according to the average replacement ratio data for 2019 (41% for both men and women). However, when comparing women and men, it must be kept in mind that even though the ratios may be the same as in this case, since the figure for women is calculated in relation to their lower earnings, an equal replacement ratio indicates lower pensions.²¹

Table 2. Aggregate replacement ratio for pensions (2010. – 2019.)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Aggregate replacement ratio for pensions (excluding other social benefits)	0,32	0,36	0,36	0,37	0,4	0,4	0,39	0,41	0,4	0,39
Males	0,38	0,4	0,4	0,39	0,4	0,39	0,42	0,42	0,43	0,41
Females	0,31	0,36	0,35	0,37	0,41	0,39	0,42	0,43	0,43	0,41

Source: Eurostat.

Whilst the gross replacement rate gives a clear indication of the design of the pension system, the net replacement matters more to individuals, as it reflects their disposable income in retirement in comparison to when working. For average earners with a full career, the net replacement rate from mandatory pension schemes at the normal retirement age averages 53.8% (data for 2018), which is 14.7 percentage points higher than the average gross replacement rate. This reflects the higher effective tax and social contribution rates that people pay on their earnings than on their pensions in retirement. For low earners (with half of average worker earnings), the average net replacement rate is 44%, while it is 58.2% for high earners (i.e. 150% of average worker earnings). It is also interesting to analyse net pension wealth, a measure of the stock of future discounted flows of pension benefits after taxes and

²⁰ Pension Adequacy Report 2018

²¹ Pension Adequacy Report 2018



social contributions, which can be thought of as the total net benefits that will be received on average from the mandatory retirement-income schemes. Net pension wealth at individual earnings equal to average worker earnings is 9.5 times annual individual net earnings for both men and women.

Table 3. Net pension wealth and net pension replacement rates

Net pension wealth		2018
	Net pension wealth, 0.50 of AW	7,7
	Net pension wealth, 1.00 of AW	9,5
	Net pension wealth, 1.50 of AW	10,2
Net pension replacement rate		2018
	Net pension replacement rate, 0.50 of AW	44
	Net pension replacement rate, 1.00 of AW	53,8
	Net pension replacement rate, 1.50 of AW	58,2

Source: OECD.

Although being the standard indicator for adequacy analysis, the replacement rate is faced with various criticism. Thus, Table 4 gives an overview of various adequacy indicators that should be used in discussions on old-age poverty and ageing with dignity.

Table 4. Adequacy indicators

Income inequality among (65+)	5,31	5,02	4,89	5,11	4,46	4,63	4,64	4,86	4,76	4,75
Males	5,08	4,96	4,57	4,67	4,56	4,57	4,59	4,84	4,56	4,4
Females	5,12	5,06	4,82	4,76	4,85	5	4,54	4,75	5,15	4,58
Relative median income ratio (65+)	0,78	0,82	0,84	0,88	0,88	0,85	0,84	0,82	0,79	0,75
Males	0,84	0,93	0,94	0,96	0,93	0,9	0,88	0,86	0,83	0,82
Females	0,73	0,76	0,78	0,83	0,85	0,83	0,8	0,79	0,76	0,72
At risk of poverty rate among (65+)	30,5	29,4	25,6	23,4	23,1	26,3	26,5	28,6	28,1	30,3
Males	25,1	22,6	20,3	18,6	20,8	22,8	21,9	24,1	23,5	25
Females	34	33,8	29,1	26,6	24,6	28,7	29,5	31,7	31,3	33,8
Material deprivation rate among those age 65 and over	33,9	34,9	34,4	35,2	32,5	32,7	30,1	28,4	26,8	22,9
Self-reported unmet needs for medical care (over 65)	10	9,1	7,5	7,1	7,6	4,3	4,3	4,1	3,4	3,1
Males	7,2	8	6,5	5,8	5,7	4	4,1	3,5	2,7	2,9
Females	11,8	9,8	8,1	8	8,8	4,6	4,4	4,6	3,8	3,2

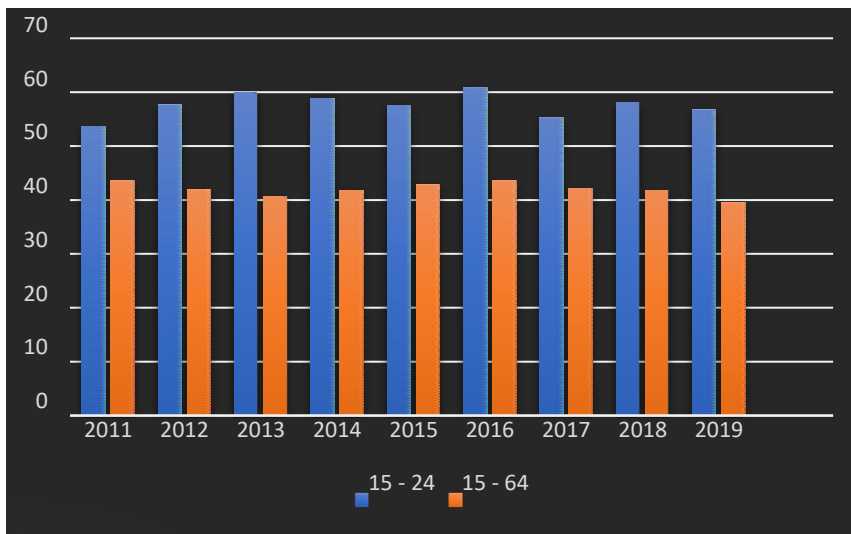
Source: Authors compilation based on Eurostat data.



Coverage

Finally, the pension system theoretically covers all those who work, as the pension contributions are paid even within types of contract which do not constitute labour relations, albeit at a smaller percentage. Increasing this percentage to the level applicable to the labour contract would provide better pension rights for atypical workers and less incentive for employers to use these kinds of contracts. Until few years ago, so called “authorship contracts”, intended for artistic and intellectual services, were widely misused as no pension contribution was paid on them, thus making them much cheaper for the employer. It is still the case, but not so much as before. In practice, the mayor gap in coverage is created by a high share of the grey economy. The exact growing number of workers which work in platform economy are sort of a mystery – there is no data on types of contracts they work on (presumably some of them, but not many, have labour contracts). Young people are more affected, as they are more likely to work in atypical jobs (including widespread misuse of student contracts, which enjoy favourable tax treatment, and it is not uncommon for students to postpone graduation for few years only not to lose the right on such contracts) (see Figure 4).

Figure 4. Employment at atypical working time (share in total employment), by age groups

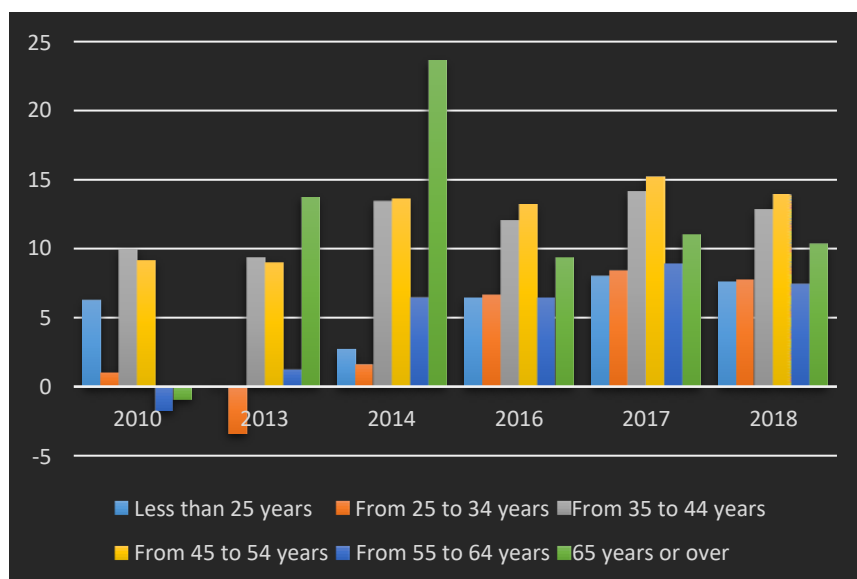


Source: authors compilation based on Eurostat data.

he gaps in formal coverage are determined by the spread of flexible forms of employment, which were advocated by all recent governments as necessary for the country’s development. Combined with weak rule of law, they create an incentive for employers to misuse them as often as possible. Gender gap in employment and wages is of course affecting the level of pensions, as almost everywhere else (Figure 5.)



Figure 5. Gender pay gap (by age groups)



Source: authors compilation based on Eurostat data

The existing pension system fails to address the needs of current retired people through the fact that the pensions are generally low, and the last 30 years saw continuous erosion of pension rights. Low level of pensions is, among other factors, determined by wage levels, contribution levels (one of the lowest in Europe), as well as by an unfavourable system of indexation (which is often changed). Table 5 shows the average pension (expressed as average of old-age, disability and survivor pensions).

Table 5. Average pensions and average net wages, in HRK (2010. – 2019.)

	Average pension	Average net wage	Average pension/average net wage
2010	2.360,57	5.450,00	43,3
2011	2.346,60	5.441,00	43,1
2012	2.383,25	5.487,00	43,4
2013	2.474,91	5.556,00	44,5
2014	2.425,70	5.716,00	42,4
2015	2.422,60	5.648,00	42,9
2016	2.437,00	5.838,00	41,7
2017	2.524,82	5.973,00	42,3
2018	2.618,61	6.262,00	41,8
2019	2.724,78	6.559,00	41,5

Source: authors compilation based on HZMO data.

Low wages, high unemployment and high share of grey (or shadow) economy (with common practice of paying part of the salary in cash and without taxes and social contributions) are seen as the main reasons that the level of pensions is generally low. On the other hand, low levels of pensions are only one of the reasons to retire early, as working longer would actually result in a lower pension. The state also allows employers to send large cohorts of workers into early retirement, without generating any disincentives for this. Resulting in a high share of



pensioners with under-average years of service, which further erodes the pension rights.

As already stressed, the pension rights have deteriorated gradually since 1990s, thus making every new generation of pensioners worse off. Table 6 summarises key labour market indicators that significantly contribute to the described state in the pension system.

Table 6. Labour market indicators

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Overall employment rates	57,4	55,2	53,5	52,5	54,6	56	56,9	58,9	60,6	62,1
Males	62,7	60,9	58,5	56,5	59,1	60,3	61,4	63,8	65,4	67
Females	52,1	49,5	48,5	48,5	50	51,6	52,4	54	55,9	57,1
Employment rates (55 - 64)	39,1	38,2	37,5	37,8	36,2	39,2	38,1	40,3	42,8	43,9
Males	50,5	49,6	48	45	45,8	48,2	45,1	49	51	52,6
Females	28,5	27,7	27,7	31	27,3	30,7	31,6	32,3	35,2	35,9
Employment rates	11,9	14	16,3	17,5	17,5	16,4	13,3	11,3	8,5	6,7
Males	11,3	13,9	16,2	18	16,6	15,8	12,7	10,7	7,8	6,2
Females	12,6	14	16,3	17	18,4	17,1	13,9	12	9,5	7,3
Duration of working life	31,6	31,4	31,2	31,1	32,3	32,6	32,2	32,5	32,4	32,5
Males	33,7	34	33,6	33,2	34,3	34,5	34	34,5	34,2	34,5
Females	29,5	28,7	28,6	28,9	30,3	30,7	30,2	30,3	30,6	30,5
Trends in wage distribution (income inequality)	5,36	5,34	5,12	5,16	5	5,03	5	4,77	-	-
Males	5,38	5,34	5,15	5,22	4,99	4,99	4,96	4,73	-	-
Females	5,3	5,4	5,01	5,09	4,98	5,03	5,04	4,8	-	-
In-work poverty rate (18-64)	6,1	6,2	5,7	5,8	5,5	5,8	5,2	5,1	-	-
In-work poverty rate (65+)	1,6	12,8	28,7	6,3	16,4	4,8	8	-	-	-
Wage share of GDP	62,0	60,9	59,3	56,9	55,5	55,2	53,7	52,7	52,5	52,7
Employment rate age group 65+	5,4	5,4	4,9	3,9	3	3,3	2,9	2,7	2,9	3,5
Males	7	7,1	7	5,7	4,1	4,5	4,5	3,8	4,3	4,9
Females	4,4	4,3	3,6	2,7	2,3	2,5	1,8	1,9	2	2,5
Trends in wage distribution (income inequality)										
less than 65	5,41	5,44	5,17	5,21	5	5	4,94	4,64	-	-
65+	4,89	5,11	4,46	4,63	4,64	4,86	4,76	4,75	-	-
Self-employed (% in total employment)	17,84	17,67	16,03	15,37	13,43	12,93	11,78	10,46	10,16	10,49



Males	19,85	19,89	18,50	18,20	16,69	16,36	14,94	12,60	12,16	13,29
Females	15,43	14,96	13,06	12,08	9,56	8,92	8,08	7,92	7,82	7,20
Employment at atypical working time as a percentage of the total employment, by age										
15 - 24		53,6	57,7	59,9	58,9	57,6	60,8	55,3	58	56,7
15 - 64		43,5	42	40,6	41,8	42,9	43,5	42,1	41,7	39,5

Source: Eurostat, HZMO.

Section 3. Possible Reforms

The issue of dealing with the ageing population results in two main concerns for policymakers, not only in Croatia, but across the EU. The first one is related to the pension expenditures and the second one to the pension adequacy. So far, the 2014 reform had some elements aimed at improving adequacy in the mandatory pillars. These include the following²²: (1) introducing the life-cycle funds into the second pillar, where each mandatory pension fund has to have three sub-funds of different investment risk exposure (aggressive, balanced and conservative); and participation in the sub-funds automatically changes with age; (2) introducing the new basic pension formula for payments under the first pillar for two-tier pensioners replicates the single-tier pension formula, making it proportional to the pension contribution rate ratio, with the effect that it increases pension benefits compared with the original formula; (3) introducing the eligibility criteria for disability pensions within which disability started to be assessed based on residual work capacity whereas control examination must be performed no later than 3 years from the date of reduced working capacity, or a partial or complete loss of working capacity occurred; (4) paying old-age pension in full to beneficiaries who continue part-time employment, up to a maximum of half-time working hours²³.

Thus, population ageing is a general social problem, as can be seen from the Table 7.

Table 7. Sustainability indicators

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Demographic old- age dependency ratio (65 and over vis-à-vis 15-64 age group)	26,7	26,5	26,7	27,1	27,6	28,3	29	29,8	30,7
Number of life years expected at 65 (disaggregated by gender)	16,7	17,0	17,0	17,4	17,5	17,1	17,6	17,4	17,7

²² Pension Adequacy Report 2018.

²³ his measure does not apply to regular self-employment activities or to early pensions.



Male	14,7	15,1	15,0	15,3	15,5	15,2	15,6	15,5	15,7
Female	18,2	18,6	18,7	19,1	19,1	18,7	19,2	18,9	19,3
Life expectancy in good health (disaggregated by gender)	6,5	7,3	7,8	5,8	5,9	4,6	5	4,9	5
Male	6,6	7,4	7,7	5,5	6	4,7	5,2	5	5
Female	6,5	7,3	7,9	5,9	5,8	4,5	4,9	4,8	5
Economic dependency ratio (retirees + unemployed vis-à-vis people in employment)	147,0	157,8	166,6	170,1	162,6	157,4	154,4	146,6	140,8
Average years in retirement, relative to average years in active employment (%)	52,5	53,7	54,0	55,9	49,7	46,2	50,6	49,8	51,8
Male	36,0	37,2	40,7	41,4	34,6	33,7	37,7	34,0	38,5
Female	71,4	73,3	69,7	72,5	66,8	60,2	65,1	67,8	66,6

Source: Eurostat

Considering the data on life expectancy at birth, according to data for 2018 it is lower compared to the EU average, amounting to 78.2 (74.9 for men and 81.5 for women). Life expectancy at the age of 65 in Croatia is 17.7 (15.7 men and 19.3 women). However, the life expectancy in good health in 2018 was much lower, 56.5 years for men and 58.5 years for women, while the expected duration of life in health after 65 years was 5.0 for both men and women. These numbers, are not only below the EU average, they record a deteriorating trend over time. There are also differences in life expectancy if some socioeconomic factors are taken into consideration, such as education and level of income. For example, according to the level of education for those with less than primary, primary and lower secondary education, life expectancy is 77.5 years, with an upper and post-secondary non-tertiary education is 76.1 years, and for the tertiary education it is 80.1 years (data for 2017). Further, in 2019, 53.7% of the population (80.6% of people 65+) with the lowest income quintile suffered from a long-standing illness or health problem. Moreover, the share of the population in the first income quintile suffering from a long-standing illness or health problem was almost double (23.8%) the share recorded for the fifth income quintile. In addition, as depicted previously in Table 4, 3.1% of people over 65 declared that they had unmet needs for medical care (the EU average is around 2.5%).

Table 8. People having a long-standing illness or health problem, by age and income quintile (%)

	First quintile		Fifth quintile	
	16+	65+	16+	65+
2010	45,6	70,8	26,6	60,1
2011	48,0	72,5	25,7	55,0
2012	36,7	70,5	20,9	55,4
2013	37,9	72,7	22,7	60,5
2014	38,4	75,6	21,8	61,3
2015	44,0	75,7	23,8	59,0
2016	44,8	78,9	23,0	58,3



2017	49,3	81,3	26,0	66,4
2018	50,8	79,2	23,9	61,4
2019	53,7	80,6	23,9	67,2

Source: Eurostat.

Life expectancy in general, and especially life in health after the age of 65, depends on the living conditions, working conditions, as well as the state of the health care system and its availability. These are all the direct reasons for Croatia's lagging behind the EU average. Raising the retirement age, although being the most popular measure to implement, does not mean that people will be able to work longer, but it does mean that early retirement will be permanently penalised by lower pensions, resulting in them being poor in old age. Old-age poverty is even now a big issue in Croatia. With a risk of a poverty rate of 30.3% (65+), Croatia is in the top five member states with the highest rate. If the poverty risk rate of pension beneficiaries is analysed, it is also among the highest at 26.3%.

Taking into consideration all of the above described data, the legal retirement age can be extended only within an environment that will enable and justify this measure (i.e. in the health sector and the labour market). Within any reform measure, policy makers should consider that there is a trade-off between financial sustainability, measured by the share of pension expenditure on one side, and pension adequacy on the other side. Based on the indicators on adequacy presented in Table 4, we can conclude that there is no space for reforms that would further deteriorate adequacy and, in general quality of life in old age.

However, current projections show that population ageing will not significantly influence financial sustainability of the pension system (that is, if the level of pensions remains as it is)²⁴.

Table 9. Projected public expenditures and contributions (as a share in GDP)

EXPENDITURES	2016	2020	2030	2040	2050	2060	2070
Gross public pension expenditure	10,6	10,8	10,5	9,3	8,5	8,3	8,1
Private occupational pensions	:	:	:	:	:	:	:
Private individual pensions	0,0	0,0	0,2	0,6	1,0	1,2	1,3
Mandatory private	0,0	0,0	0,2	0,6	1,0	1,2	1,3
Non-mandatory private	:	:	:	:	:	:	:
Gross total pension expenditures	10,6	10,8	10,7	9,9	9,5	9,4	9,4
Net public pension expenditure	10,5	10,6	10,4	9,2	8,5	8,2	8,1
Net total pension expenditure	10,5	10,6	10,6	9,7	9,4	9,3	9,3
CONTRIBUTIONS							
Public pension contributions	5,8	5,7	5,6	5,6	5,6	5,6	5,6
Total pension contributions	7,3	7,3	7,4	7,4	7,4	7,4	7,4
Prijenos sredstava iz 2. stupa u stup generacijske solidarnosti	0,1	0,2	0,5	0,6	0,6	0,6	0,6

Source: The Ministry of Labour, Pension System, Family and Social Policy&HZMO (2019). Croatia Country fiche on pension projections prepared for the Economic Policy Committee

²⁴ According to the The Ministry of Labour, Pension System, Family and Social Policy&HZMO (2019). Croatia Country fiche on pension projections prepared for the Economic Policy Committee, document which is standard part of the Ageing Report.

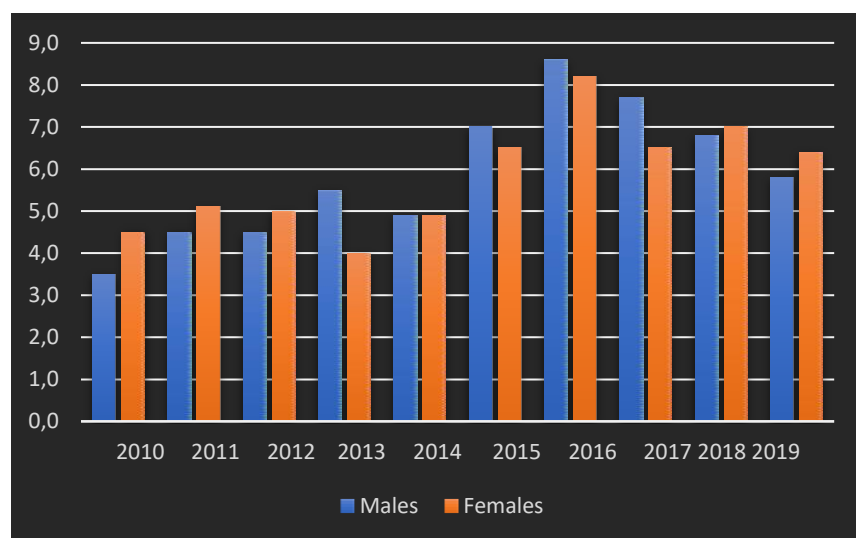


According to trade unions, as a first step, order should be made in the pension system. This is primarily related to the issue of privileged pensions. Pensions that are not earned through work (i.e. years of service) need to be separated and financed from the general taxation. Also, the transition cost of the introduction of the second pillar must be excluded from the calculation of the pension system deficit.

The Grey economy needs to be more seriously dealt with. In Croatia, the shadow economy increased since early 2000, and it is estimated at around 35% of GDP (data for 2016)²⁵.

Discussions need to start about the pension system capable to ensure pensions for precarious workers, the share of which is currently the largest in the EU (6.1%, relative to the 2.2% which is the EU28 average). The Figure below shows the precarious employment by gender, revealing again the less favourable position of women relative to men.

Figure .5. Precarious employment (%)



Source: Eurostat.

Non-standard workers in general, including part-time and temporary employees as well as the self-employed, raise concerns for the long-term pension system, as they might weaken the income prospects of future generations of retirees. The self-employed, which currently account for 10.5% of employment as well as their family members, under mandatory pension insurance, are granted the same rights as employed persons and their family members. Self-employed persons pay their own contributions, at the same rate as employed persons; however, the contribution base differs according to the type of self-employment activity. Unlike the situation for employees, the pension is granted only for the period covered by contributions, although additional contributions can be paid retrospectively, in which case the pension is recalculated²⁶. This can have severe consequences for the pension benefits of the

²⁵ Kelmanson, B., Kirabaeva, K., Medina, L., Mircheva, B. & Weiss, J. (2019). Explaining the Shadow Economy in Europe: Size, Causes and Policy Options, IMF Working Paper. WP/19/278

²⁶ Pension Adequacy Report 2018.



self-employed today and in the future, and for the overall capacity to finance adequate pensions. Upon retirement, former self-employed people tend to have lower public pensions than former employees, and non-standard workers in general have more limited access to funded pension arrangements. The research for OECD countries shows that, based on mandatory contributions, self-employed workers will receive an old-age pension that is 20% below the benefit of former dependent employees having the same taxable income over their working life²⁷.

Working on fixed-term contracts, spending long periods in unemployment, working on contracts other than labour contracts, and receiving part of the salary in cash (without contributions being paid) will result in much slower accumulation of pension rights relative to the previous generations. This, among others, include discussing new sources of income for future pensions. An increased share of atypical jobs will be a serious problem for all future generations of pensioners, as already explained above. In the long term, this is maybe the key challenge which must be addressed by the pension reform. It should bear in mind that the government can have only limited impact on demographic problems, while it can more actively shape the labour market.

Currently, the second pillar needs to be reassessed, and the effects of its introduction analysed and discussed. Trade unions think that its introduction was a mistake, especially as current data show that only high earners will have higher pensions because of it, while in general such a system cannot solve the demographic problems of the pension system (no matter how much some claim otherwise). However, there is no strong position among trade unions about what to do with it now, as they are aware that a quick dismantling could produce more damage than benefits for the system. In any case, contributions for the second pillar should not be increased as it is occasionally being proposed, since there is no fiscal capacity to do so. Moreover, the idea that the second pillar should be additionally strengthened is actually “on the table” since its introduction. But, no Government has the courage to face its financial consequences in terms of further increase of transition costs of its introduction, caused by siphoning a few more percentages of contributions from the PAYG public system to individual capitalised accounts. As this idea is often strongly promoted, it will continue to resurface (although probably not during the Covid-19 crisis).

In general, the policy positions and recommendations explained above do not require additional funding, but are actually aimed at increasing the financial sustainability of the system.

²⁷ OECD (2019), Pensions at a Glance 2019: OECD and G20 Indicators, OECD Publishing, Paris, <https://doi.org/10.1787/b6d3dcfc-en>



Section 4. Guidelines and Recommendations

This section will summarise the trade union proposals, and explain how they contribute to formal and effective coverage, as well as the adequacy and sustainability of pensions for all.

Trade unions in Croatia call upon a comprehensive regulation of the pension system (instead of a series of partial reforms), which has to be based on a wide expert and public debate, as well as on dialogue with social partners. Also, in the lines of ETUC priorities for ageing with dignity, Croatian trade unions highlight that any comprehensive reform approach must have in mind inclusive, solidarity-based, fair, equitable, effective, adequate, and sustainable pension systems. The main issue is that there is usually a trade-off between these features of the pension system. In the following lines, we outline main messages and reform proposals.

- First, from the aspect of achieving financial sustainability, trade unions point out that pensions that are not earned through work need to be separated and financed from the general taxation. It should be emphasised that the European Commission recommends aligning pension provisions for specific categories with the rules of the general scheme, but no progress is being made in this area. All of the trends and challenges described in previous sections show a very selective approach in solving the problems in the pension system, which, unfortunately, is always the most harmful to the workers.
- Also, according to trade unions, the transition cost of the introduction of the second pillar must be excluded from the calculation of the pension system deficit. Moreover, they stress that the current second pillar needs to be reassessed, and the effects of its introduction analysed and discussed. Trade unions think that its introduction was a mistake, especially as current data show that only high earners will have higher pensions because of it, while in general such a system cannot solve the issues stemming from demographic trends. However, there is no strong position among trade unions about what to do with it now, as they are aware that a quick dismantling could produce more damage than benefits for the system. In any case, contributions for the second pillar should not be increased, as it is occasionally being proposed.
- Increasing the duration of working life cannot be achieved by solely raising the retirement age and/or imposing the penalties for early retirement. However, it is possible to act on all relevant factors that improve working, health, financial and other factors, which individually as well as in combination, enable an increase of working life. However, until this is not achieved, it is necessary to bear the burden of higher expenditure on pensions.
- Since the main sources of the risks of ineffective coverage include low wages, shadow or grey economy and incomplete work careers (i.e. long or many short periods of unemployment, and early retirement forced by employer or general situation on the labor market), policy makers should first implement reforms in the domain of the labour market. For example, measures should be introduced in order to enable



workers to stay longer in the labour market (through stimulating those employers who keep workers longer). Participation in adult education needs to be increased, in order to allow older workers to remain in the labour market. Also, health care sector reform would also contribute to the factors that hamper employment after age of 65. Finally, grey economy needs to be more seriously dealt with, as it is estimated at around 35% of GDP (data for 2016), which includes broader reforms which would increase the quality of institutions (rule of law, regulatory environment, dealing with corruption...).

- Discussions need to start about a pension system capable to ensure pensions for current precarious workers, the share of which is currently the largest in the EU (6.1%, relative to the 2.2% which is the EU28 average). This, among others, includes discussing new sources of income for future pensions, as the increased share of atypical jobs will be a serious problem for all future generations of pensioners. In the long term, this is maybe the key challenge which must be addressed by the pension reform.
- The pension system debate should start dealing more with the adequacy issue, as it has been shown that it is a more severe problem. For now, there is no institutional reference or definition of adequacy that is used as a standard in a country. With pensions currently amounting to 39% of late-career work income according to the average replacement ratio data for 2019 (41% for both men and women), Croatia is among the worst performing countries in EU.
- Further, the issues of coverage and effectiveness are rarely raised, except by the trade unions. Trade unions outline a recent improvement in the position of parents (mostly women), by introducing additional pension rights which depend on number of children (or number of years of work lost due to maternity or parental leave), as an example of dealing with one of the contingencies significant in leading to ineffectiveness of pension provisions, i.e. maternity, paternity and parental leave.
- Any debates on the pension system and its reforms should include the European Pillar of Social Rights and the recent European Council's Recommendation on Access to social protection for workers and the self-employed²⁸

Currently, the Government is planning to introduce a national pension, which would start its implementation in January 2021. This pension would actually be an extension of social welfare benefits in the amount of HRK 800. It would allow any person over the age of 65 who has no other source of income to receive a state pension, and it is line with the recommendations of the Union of Croatian Pensioners. According to the estimates, it would cover 20,000 people in the first two years and 85,000 people aged 65 and more.

Finally, as there is always an issue of political determination for implementing any kind of reforms, trade unions state that no one is seriously interested in pension system reform. As a matter of fact, when implementing reforms, governments in general do it to fulfil European

²⁸ <https://ec.europa.eu/social/main.jsp?catId=89&furtherNews=yes&langId=en&newsId=9478>



Commission or the IMF recommendations (e.g. increasing a retirement age is a very easy reform to implement, no matter what its final effects). At the moment there are no discussions on the pension system reforms, as the current Government already implemented what it had planned, but was partially defeated by the trade unions (in increasing the retirement age and penalisation of early retirement). Also, there is a general lack of interest in the pension system in general among younger generations, which consequently makes them more likely to tolerate that they are included in the grey economy. The existing research²⁹ has shown that if members of the working-age population do not perceive the existing public pension scheme(s) as fair and capable of providing adequate pensions, they will try to avoid participation in the system, which can be achieved by leaving the official labour market or by creating forms of employment that do not require participation in the public system (e.g. if there exists a tax-financed public pension system, people can evade by leaving the country or cheating with tax declaration).

²⁹ Mattil, B. 2006. Pension Systems: Sustainability and Distributional Effects in Germany and the United Kingdom. Pysica-Verlag Heidelberg, pp.17.

