

ANALYSIS OF OLD-AGE PENSIONS IN THE CZECH REPUBLIC CLASSIFIED BY SEX

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Abstract

At the end of 2020, more than 2.4 million pensioners were being awarded an old-age pension, and 70-100 thousand more are added each year. There are four types of pensions. Most pensioners are granted a standard old-age pension (58%) and an early retirement pension (33%). On average, women are awarded old-age pensions 1.5 years earlier than men. The share of women in the old-age pensioners population was 60.1% and this value increases with age up to 75.3% for pensioners aged 90 years old and over. 34.5% of women receiving an old-age pension were being given a widow's pension at the same time, but only 9.5% of old-age men pensioners were receiving a widower's pension in parallel. The share of parallel pensions grows with growing age, meaning for female pensioners aged 90 and over the proportion is 85.9%, whereas for men of the same age group it is 48.1%. The average duration of the old-age pension is increasing faster for women; while men generally receive it for 19.5 years, women receive it for 28.5 years, i.e. 44.4% longer than men. Women's old-age pension was on average CZK 13 204, whereas for men it was CZK 15 868, i. e. 20.2% more.

Key words: old-age pensions, pension types, retirement, gender equality

JEL Code: I31, J31

Introduction

The receiving of old-age pensions makes up an important part of life of a person, in which the state provides monthly funding to residents who have earned enough years of insurance through working and have reached the retirement age. In this way, the state tries to pay people back for their long years of payments to the state funds and to guarantee them a certain standard to live up to. In the Czech Republic, the Czech Social Security Administration (CSSA), which is a part of the Ministry of Labour and Social Affairs, paid out pensions worth CZK 507.6 billion in 2020, of which old-age pensions accounted for 81%, while widow's/widower's pensions accounted for 5.3%.

The article analyses the main indicators related to old-age pensions classified by sex to identify the main differences between the sexes in this social sector. The research is based on statistical yearbooks of the Social Security Agency. Thanks to the unchanged methodology, it is possible to track changes over the last 10 years. I primarily focus on the current situation which relates to 2020, and if not otherwise noted, the comments describe the situation at the end of this year.

The topic of old-age pensions in the Czech Republic has been studied from the perspective of law by Pilíková (2009) or Čevelová (2012), and the projection of future costs of these pensions has been studied by Fiala and Langhamrová (2014). Fiala and Langhamrová (2017) also dealt with pension age to stabilize dependency ratio, Vostatek (2014) studied pension regimes and reform and continue with its impact to statutory retirement ages in 2017. Šlapák (2016) compared minimum insurance period in selected countries. The impact of divorce on pension income has been studied by Šatava (2013) and Šatava (2016) has also looked at the effect of childbearing on the amount of old-age pensions.

1 Types of pensions

The Czech Social Security Administration divides pensions into two groups. In the first group are the direct pensions, which are divided into disability and old-age pensions. In the second group of pensions are survivor pensions, which include orphan's pensions and widow's/widower's pensions. Orphan's pensions are received by dependent children and for this reason these pensions are not included in the article. On the other hand, widow's and widower's pensions tend to be linked to older age and are belong to the widow/widower of a deceased spouse. The deceased must had been receiving or entitled to one of the direct pensions at the time of death. Although these pensions are designed for one year, there are five conditions and, if at least one of them is met, the person can continue to receive the pension until he or she meets none of them. The most relevant condition applies to people who are no more than 4 years younger than the pension age of a man of their birth year or have already reached their pension age. The entitlement to a widow's/widower's pension can be reactivated by meeting one of the conditions again, and the entitlement to this pension ultimately ends by remarriage. Retirement age is a condition that people meet for the rest of their lives, so in 2019 91.1% of widow's/widower's pensions were terminated by the death of the pensioner (Vít, 2022).

The old-age pensions covered by the work are divided by the CSSA into six groups, according to its methodology from the statistical yearbook by the legal bases that make people eligible for old-age pensions.

Tab. 1: Entitlements for types of pensions

S = old-age pension according to Article 29 par. 1 a 3/a), Article 74, Article 76 and Article 94 Act No 155/1995 Coll. or relevant provisions of previous legislation, including the SIN pension according to Article 29 par. 4 Act No 155/1995 Coll.

SD = old-age pension according to Article 30 Act No 155/1995 Coll., in force until Dec 31, 2009

ST = old-age pension according to Article 31 Act No 155/1995 Coll.

SRN = old-age pension according to Article 29 par. 2 a 3/b) Act No 155/1995 Coll. or relevant provisions of previous legislation

SR = proportional old-age pension according to Article 26 Act No 100/1988 Coll., in force until Dec 31, 1995

SI = old-age pension transformed from disability pension when reaching 65 years of age according to Article 61a Act No 155/1995 Coll. (or Article II/5 Act No 306/2008 Coll.)

Source: compiled by the author

The S pension is the most common type of pension, as it is awarded to a person who has reached retirement age and has completed a sufficient insurance period. The required length of insurance was 25 years before 2010 and has increased by one year each year since then. From 2018, it is fixed at 35 years. The retirement age is determined by the year of birth and is reduced for women according to the number of children. This benefit for women no longer applies to women born after the year 1971 and from that time onward the age of retirement is set to 65 years for everyone.

The second most common pension is the ST type and it is an early retirement pension. The claimant must have earned the same length of service as for the S-type pension and be no more than 3 years younger than his/her retirement age if his/her retirement age is less than 63. If the claimant's pension age is 63 or more, the person can be younger by a maximum of 5 years but has to be at least 60 years old.

The SI pension is available to invalid pensioners aged 65 who do not qualify for the S pension.

In the absence of sufficient years of insurance for the S pension, a person may be awarded the STR pension if she/he is at least five years older than the retirement age of a man of the same date of birth. However, they must still have at least 20 years of accumulated insurance after 2013, whereas before 2010 the minimum was 15 years.

The remaining two old-age pensions have been recently discontinued, because the legal basis for granting them is no longer in force. One of these pensions is the proportional pension SR. This type of pension was granted to men aged at least 65 y. o. who have been employed for at least 10 years and to woman aged at least 60 and who have been employed for at least 20 years. The amount of the proportional pension is based on the average earnings per one year of insurance and the pensioner were to receive 2% of this for each year of his/her employment. The SD pension was a type of early retirement pension to which a person was entitled if he/she had completed at least 25 years of insurance and, at an age not more than two years below their retirement age, had been continuously registered as a jobseeker at the Labour Office for at least 180 days.

2 Pension types ratio and the average age of new pensioners

This chapter deals with the different frequency of specific old-age pension types divided by age and sex of pensioners and compares the structure of newly granted pensions and all old-age pensions that are being granted.

2.1 The awarding of old-age pensions

Although old-age pensions are divided into 6 types, only four of them are currently being used. The number of newly granted pensions in the Czech Republic has been in the range of 70 000-100 000 per year since 2012. The great outlier was in 2011, when 148 thousand people were granted a pension, while the following year the value was half of that. The reporting period for newly awarded pensions is 2010-2020, because previously people were not awarded SI pensions. The shares of each type of old-age pension in all newly awarded old-age pensions varied considerably between years, with no obvious trend, so the shares below are based on data from the entire period of 2010-2020, which considers 1.07 million new pensioners of both sexes. Of these pensions, 58.0% were S-type, 33.0% ST-type, 8.8% SI-type and 0.2% SRN-type.

In comparison to these averages, women were more likely to be granted early pensions (ST) during the period and their share of new pensions ST was 0.8 percentage points higher than the average for both sexes. Men were more likely to receive S-type old-age pensions and disability old-age pensions (SI) as new pensions. The highest share of early pensions (ST) was recorded in 2011. This was the only year when the share of any type of old-age pension among

the new pensions was higher than the share of S-type. This year, early pensions (ST) made up 55.5% of newly granted pensions for men and 48.5% for women. The transformation of the disability pension at 65 (SI) had the highest share of new pensions at 15% in 2012.

2.2 Age distribution of new pensioners

Overall, the average age of new pensioners in 2020 was 62.8 years for men and 61.3 years for women. In recent years, there has been a convergence of these two ages between the sexes, and since 2010, the age has increased by only 1.1 years for men and 2.7 years for women.

Tab 2: Age distribution of newly granted solo old-age pensions in the year 2020

	57 years and less	58 years	59 years	60 years	61 years	62 years	63 years	64 years	65 years	66 years	67 years and more
Women	0%	1%	7%	25%	40%	11%	3%	0%	12%	0%	1%
Men	1%	0%	0%	3%	7%	14%	66%	1%	8%	0%	1%

Source: compiled by the author

The types of newly awarded pensions differ when it comes to the ages of pensioners and the variability of their ages. For the S-type old-age pension, 9 of 10 new men pensioners tend to be of modal age, and in 2020 the modal age share for men was 97%. For women, due to different retirement ages caused by a different number of children, not than many of them are of modal age. For women, 50-60% of newly granted S-type pensioners are of modal age and, after including secondary years, the number of them exceeds 90% within the three-year interval. In 2020, new male S-type pensioners were on average 63 years old and female pensioners were on average 61.2 years old. In this case, there is a convergence of ages, and while this age has increased by 2.6 years for women compared to 2010, it has only increased by one year for men.

Newly granted early retirement pensions (ST) for both sexes were very similar to S-type for women in the variability of pensioner ages, and 85-90% of new pensioners of both sexes were also in the three-year interval. Early retirement (ST) is granted sooner than S-type retirement and the average age in 2020 for women is 60.2 years, while for men it is 61.8 years. The average age of new pensioners for this pension has increased by only 1.8 years for men and by 3.1 years for women since 2010.

The STR-type old-age pension, which is awarded at age 65 by transforming a disability pension into an old-age pension, by definition has no variation in the ages of newly granted pensions, as it always begins at age 65. This pension is the reason for the increased presence of newly awarded pension at that age.

In 2020, the average age of new retirement SRN-type pensioners was 67.1 years for men and 67 years for women. Due to the low occurrence, it has not been analysed in detail.

3 The structure of pensions in payment

At the end of 2020, the number of old-age pensioners reached 2 400 479, of which women represent 60.1%. The number of pensioners has been increasing for a long time and, according to the OLS linear regression, the number of pensioners has on average increased by 12,5 thousand every year since 2010. However, between the end of 2019 and 2020, the number decreased by 14.3 thousand, most likely due to higher mortality caused by the SARS Covid-19 pandemic. While the number of female pensioners increased by 15.8 thousand since the end of 2010, the rise for males was 124.6 thousand. As a result, the ratio of women among the old-age pensioners, equating to 63.1% in 2010, is according to the OLS linear regression decreasing on average by 0.3 pp per year.

In contrast to the chapter about new pensions, this chapter also classifies pensions according to their coexistence with survivor's pensions. For both sexes, the proportion of solo old-age pensioners is increasing, as it was 90.5% for men and 65.5% women by the end of 2020. For men, this percentage has grown more slowly than for women, as it has increased by 0.6 pp compared to 2010, while for women it has increased by 2.6 pp.

3.1 Representation of pensions by types

For both sexes the S-type old-age pensions are, same as the newly granted pensions, the most common, as they were being awarded to 66.1% (59.1% solo, 7% combined) of old-age pensioners for men and 69.4% (42.7% solo, 26.7% combined) for women at the end of 2020. The prevalence of this type of old-age pension declines for both sexes, no matter if it is in combination with a survivor's pension or not. The occurrence of S-type pensions has fallen by 7.1 pp for men and 7.6 pp for women since 2010. Women represented 61.2% of S-type pensioners at the end of 2020, which is 1 pp higher than the overall share of women among pensioners. Similarly like with all pensioners, the share of female pensioners receiving S-type pension is declining.

The only type of old-age pension whose share increased over the whole period of 2010-2020 was the early ST-type pension, which at the end of 2020 was received by 29.1% (27.1% solo, 2.1% combined) of male old-age pensioners and 25.8% (20% solo, 5.8% combined) of

female old-age pensioners. The shares of this pension type increased independently on whether it was combined or not, rising by 8.3 percentage points for men and 8.2 percentage points for women. However, women represented 57.1% of ST-type pensioners at the end of 2020 and number share has been declining in recent years.

The third most common pension for both sexes is the disability pension transformed into the old-age pension at the age of 65. This type of pension accounts for 4.4% of old-age pensioners of both sexes, with the difference that among male pensioners, 3.9% of all pensioners received this pension solo and among women the share is just 2.6%. For men, the share of SI-type pension fell by 1.1 pp between 2010 and 2020, while for women the share was the same in both years, but the share of SI solo increased and the share of SI combined decreased. Although women's share among SI-type pensioners is below the overall average (59.8%), it has been increasing in recent years, which is atypical to the overall trend in women's share among pensioners.

Only 0.3% of male pensioners and 0.4% of female pensioners were receiving one of the other three types of old-age pensions in 2020. The shares of SD and SR pensions are declining due to the absence of new pensioners, while the pension received 5 years after retirement age (SRN) is below 0.3% for both sexes in the long term. The lowest proportion of women among SRN pensioners, equal to 56.6%, was recorded at the end of 2020. This is an under-represented pension, with between 5 and 6 thousand pensioners receiving it in recent years. Nevertheless, the 15.7 pp drop in the female share since 2010 is significant. The highest proportion of women among pensioners has long been recorded in the disappearing SR-type pension, for which 97.7% were women at the end of 2020 and 1.6 thousand pensioners were receiving this pension.

3.2 Average age of pensioners

Different types of pensions also have different average ages of pensioners. Pensioners receiving old-age pensions solo are on average 71.1 years old for men and 70.3 years old for women. The gender gap has been decreasing recently and has fallen by 0.9 years since the end of 2013. In the case of combined pensions with survivor pensions, the average ages of pensioners are higher for all types. Average ages were calculated from pensioners aged 50 and over. Pensioners in the 90+ age group were given an age of 92.1 for men and 92.4 for women. Those were the average ages of this group according to the Demographic Yearbook of Czech Statistical Office at that time.

The largest group of S-type pensioners receiving a solo pension had an average age slightly higher compared to the population of pensioners. While the average age of male pensioners was 72.5 years, the average age of female pensioners was 71.2 years, which was also more than a year lower. Pensioners who receive this pension together with a survivor's pension have a higher average age. For men it is 79.3 years and for women 79.4 years; in 2013 women had 0.9 years average age lower than men.

The second most common old-age pension, which is awarded to pensioners before reaching the retirement age, has the lowest average pensioner age and is the only solo pension type that has average pensioner ages lower than the average ages of the solo pension population. Males have an average age 69.8 years and females are more than a year younger, in this case 68.2 years. Although men have an average age two years higher than women when receiving a combination of a specified pension and a survivor's pension (men 73.8; women 71.8), this difference is decreasing.

The gender gap is smaller for the solo pensions created by the transformation from the invalidity pension (SI). These pensions arise later than the two previously mentioned, and the average age of a male and female pensioner receiving this pension is 72.4 and 72 years old. The difference in the average age between the sexes has been increasing in recent years and in 2010 it was 0.3 years higher for women compared to men. In the case of receiving a specified pension with survivor's pension, the average age of men is 77.7 years, and of women it is 78.3 years.

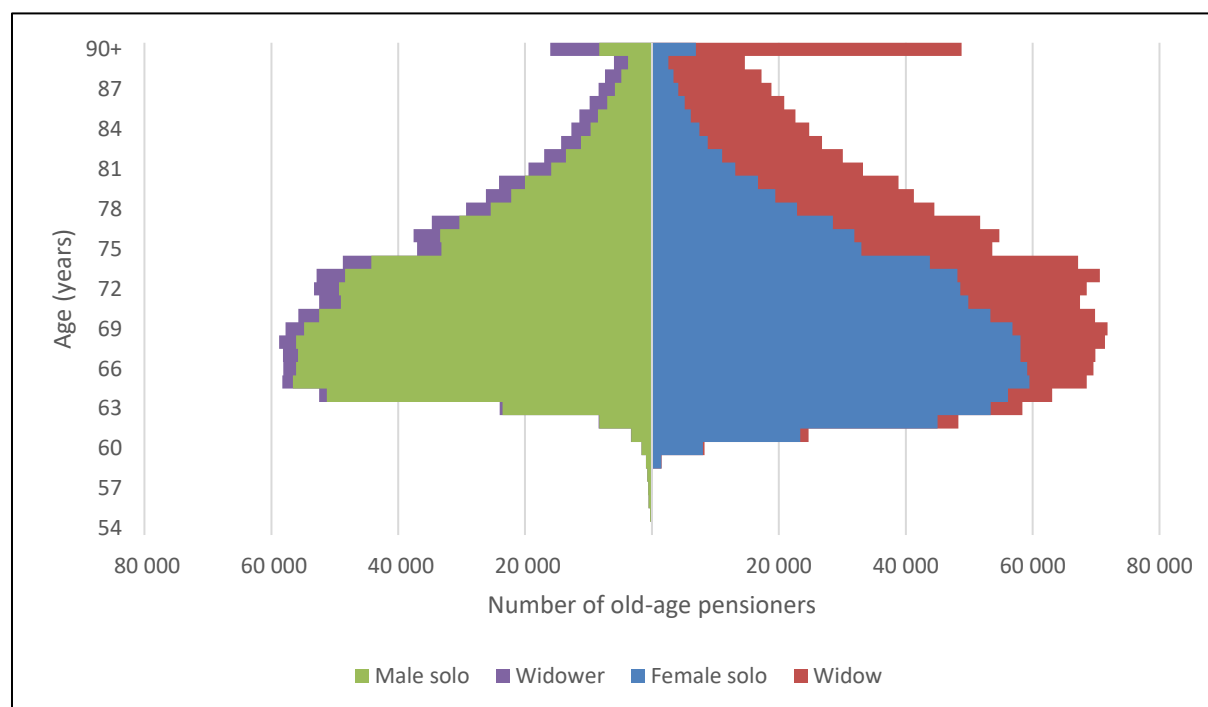
Women receiving the SRN-type pension, which starts five years after the retirement age if the insurance period for type S is not fulfilled, are on average older than men. The average age of women is 76.4 years, while men are on average more than two years younger (74.1 years). When this pension is combined with a survivor's pension, the difference between the sexes is 3.9 years (men 77.7; women 81.6). The differences between the sexes in both situations have arisen in the last 6 years, because previously the values for both sexes were similar.

The highest average ages are for women and men receiving SR-type pensions individually or in combination, the average ages being always above 90 years. This pension no longer is granted and the youngest people receiving it at the end of 2020 were aged 84 years old.

3.3 Structure of pensioners classified by age

This subchapter gives a consolidated view of the structure of pensioners according to their age and connects the information from the previous subchapters. The knowledge from previous chapters is observed in relation to the changing age of pensioners.

Fig. 1: Structure of old-age pensioners in payment at the end of the year 2020



Source: compiled by the author

Chart 1 shows the number of old-age pensioners at the end of 2020, which, apart from gender, is also divided into old-age pensioners receiving a solo pension and a pension in combination with a survivor's pension. Women represent 60.1 % of pensioners at the time of the report. The share of women varies considerably across the ages of pensioners. Although there were more male pensioners aged 58 and younger, due to the small number of pensioners, women's share exceeds four-fifths at ages 60-62, with a peak at age 61 (88.2%). At later ages, women's share declines, with a local minimum at age 65, where women's share is 54.0%. After the age of 65, pensions are not granted very often and, according to the chart 1, the number of pensioners peaks around this age, which is also influenced by the size of the generation. As the male population dies out more rapidly, the proportion of women among pensioners increases linearly from age 65 upwards, with the share closest to 60.1% at age 77. The proportion of

women continues to rise in the older age groups to 70.9% at age 89. A specific group is pensioners aged 90 and over, of whom women account for 75.3%.

The largest group by the number of pensioners at the end of 2020 was the 69 age group for women and an age group one year younger for men. As the age of pensioners increases, the proportion of pensioners receiving pensions in combination also rises. Combined old-age and survivor's pensions are received by 34.5% of female pensioners and only 9.5 % of male pensioners, so the share of these combined pensions will also grow faster for women as they get older. The increase for women is rather linear. More than a 1 out of 10 female pensioners are already receiving a survivor's pension at the age of 64, more than half of them at the age of 79 and more than four-fifths at the age of 88 and older. For men, the share of parallel pensions exceeds one tenth when the pensioner reaches the 75 y. o. age group. This share never reaches 50% and even pensioners who are 90 years old and over receive a survivor's pension only in 48.1% of cases, although the increase compared to the age group of 89 is 10.6 percentage points.

Regarding the proportion of pension types in age groups, regardless of the coincidence with survivor's pension, there is a noticeable high prevalence of the early ST-type pension in younger age groups, which is with increasing age replaced by the standard S-type pension, which is the major one for women aged 62 and older and for men aged 64 and above. For women, the ST-type pension shares vary between 25% and 40%, with no obvious trend in the 65-77 age groups, and then the shares fall sharply. No women aged 82 and over receives this type of pension. For men, the pattern of ST-type pension share is similar, except that in the 64-81 age groups the prevalence reaches 15-45%, and its curves are similar to the ones related to women. In the 85+ age groups, this type of pension is not represented for men. This pension is being now implemented and for this reason, there has been a long-term increase in the share of this type of pension among pensioners of both sexes. The SI-type pension starts at the age of 65 for both sexes. In that age group and all others, the pension holds a share of 4-6% of pensioners for both sexes. The share of the S-type pension is in contrast to the other two pensions mentioned and is primarily influenced by the significant fluctuations of the ST-type pension. The other three types of pensions account for less than 1 % for men of all ages and for women they are above 1 % in the age groups 86 and older, with a peak of 2.6 % in the oldest age group due to the SR-type pension.

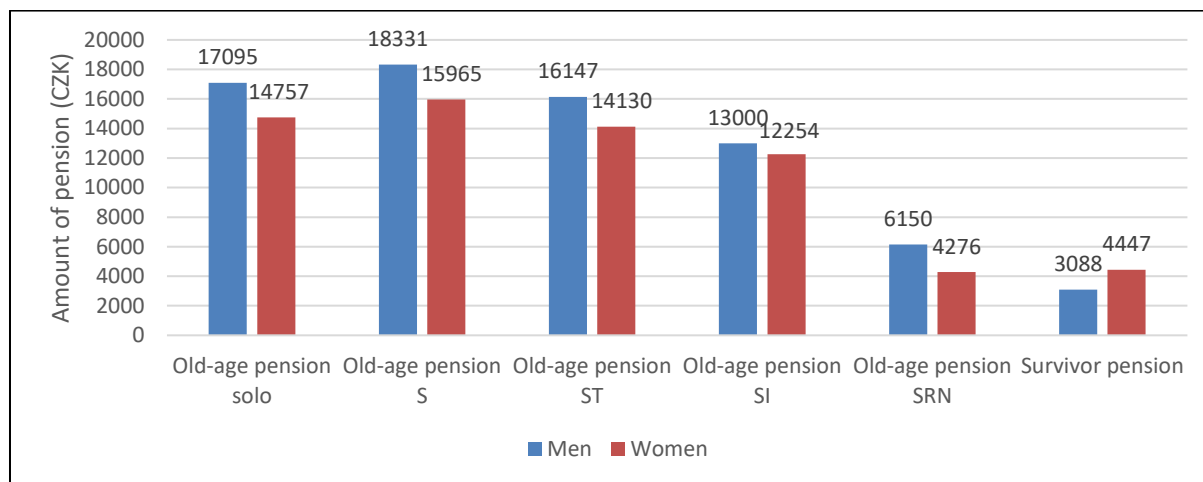
3.4 Duration of receiving a pension

The higher mortality rate for men compared to women and the earlier age of retirement for women imply a longer duration of receiving old-age pensions for women. The length of pension duration is calculated on pensions that have lapsed in a single year. In 2020, the average duration of women's old-age pension was 28.5 years, compared to only 19.5 years for men. Due to the long-term perspective of the observation of this variable since 2000, an increasing linear trend in the length of this pension duration is noticeable for both sexes. According to the OLS regression model, the value increases on average by 0.12 years for men each year, and by 0.29 years for women. The gender gap is not only growing in nominal value, but also in relative value, and while in 2020 women were receiving old-age pensions for 44.4% longer than men, this gap is increasing on average by 0.6 pp with each passing year. In the Czech Republic, life expectancy in 2020 was 75.3 years for men and 81.3 years for women according to Demographic Yearbook of the Czech Republic.

4 Different pensions

Newly granted pensions are on average higher than the average pensions awarded to all pensioners. For solo pensions of all types, it is CZK 1,227 for men and CZK 1,553 for women. This difference is due to the most common S-type and ST-type pensions, which are on average more than CZK 1,500 higher for newly awarded pensions for men compared to the same pensions for all pensioners, and for women the difference is more than CZK 2,000 for both pensions. SI-type pensions, on the other hand, are on average lower when it comes to newly granted pensions for both sexes and while the difference is CZK 135 for women, it is ten times higher for men.

Fig. 2: The average of newly granted pensions classified by type of pension at the end of the year 2020

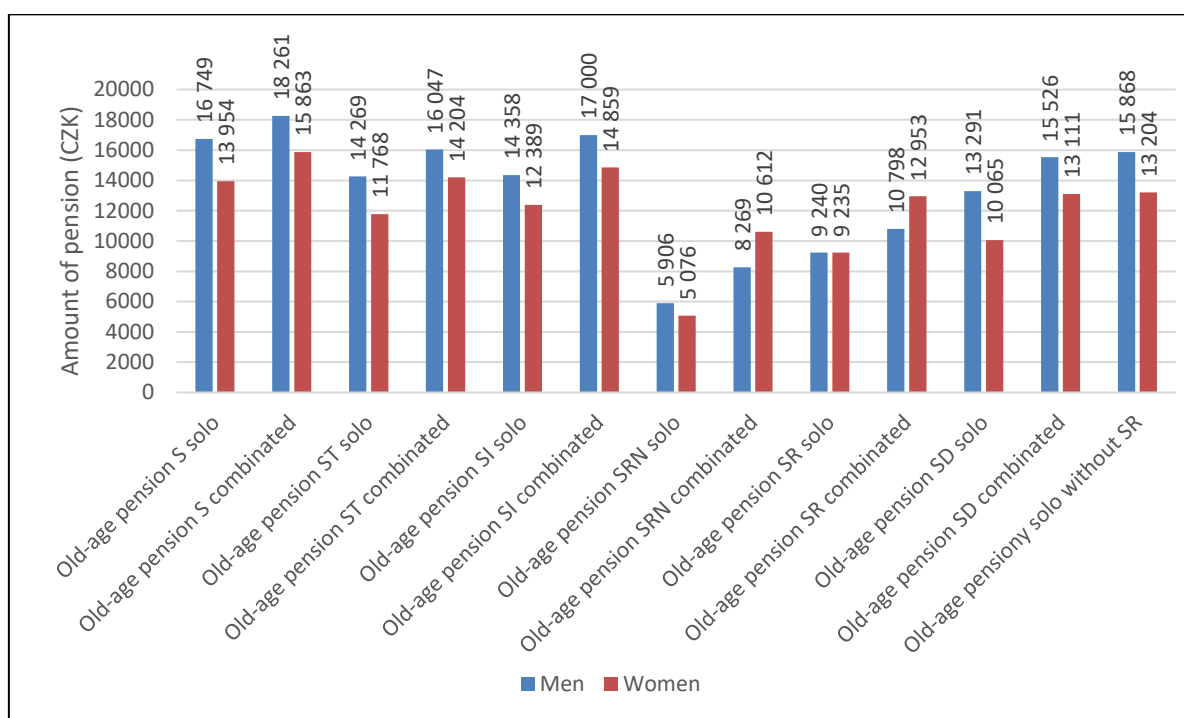


Source: compiled by the author

The highest newly granted pensions in 2020 are the standard S-type pensions, which on average equate to CZK 17 095 for men and CZK 14 757 for women. The average male pension is 14.8% higher than the average female pension, so there's a larger relative difference than with the second most common ST-type pension, for which the gender gap in 2020 was 6.1%. The average newly awarded ST-type pension in 2020 equals CZK 16 147 for men and CZK 14 130 for women. With newly granted SI-type pensions, men also receive on average 14,3% more money than women. The average amount of the newly awarded SI-type pensions was equal to CZK 13 000 for men in 2020, while for women it was CZK 12 254. The only pension in the chart 2 that is higher for women than for men at the time of its granting is the survivor's pension (widow's/widower's pension). These pensions were in 2020 on average CZK 4 447 for women, while the average amount for men was 30.6% lower, equating to CZK 3 088. The higher values of women's survivor's pensions are logical, because the state is trying to compensate the loss of income due to the fact that the deceased used to contribute to the family budget and, considering the higher earnings and pensions for men, it is clear that women must be compensated more when a husband dies.

The nominal values of pensions increase over time, so it is more relevant to look at the relative differences mentioned in the previous paragraph. Since 2010, the relative pensions of both sexes have on average converged for SI and ST pensions, whose relative gender gap has fallen by 17.3 pp and 6.9 pp. For the other pensions, the trends in the differences were not clear.

Fig. 3: Average pensions of all old-age pensioners at the end of the year 2020



Source: compiled by the author

The average amounts of all pensions received at the end of 2020 are divided into pensions received alone and in combination with widow's/widower's pensions. Receiving another pension in parallel has a positive effect on the income, increasing the average S-type pension by CZK 1 512 and the SI-type pension by CZK 2 642 for men. The average increases for other pension types for men are somewhere in between. For women, the average increase of the amount is stronger compared to men for all types except the SI pension. The positive impact of the widow's pension on the average pension is also the smallest for the S-type pension, which increases by CZK 1 909, while the SRN-type pension on average increases by CZK 5 536. Overall, the average increase of the old-age pension by granting a survivor's pension equates to CZK 1 811 for men and CZK 2 873 for women.

On average, S-type pensions are the best paid, with an average amount of CZK 16 749 for men and CZK 13 954 for women if received solo. Men's average S-type pensions are 20% higher than women's, and it is the smallest relative difference for this type of pension in the last ten years, but only 2.3 percentage points lower than in 2010. Men have a 15.1% higher pension when receiving an S-type pension in tandem with survivor's pension, which makes it the maximum relative gender gap observed in recent years.

Early ST-type pensions on average equate to CZK 11 768 for female pensioners and CZK 14 269 for male pensioners, i.e. men receive 21.3% more. As to the S-type pension, there is a smaller relative difference between the sexes when receiving a survivor's pension in combination, with a difference of 13.0%. The relative gender gap decreases slightly when it comes to the separate receiving of the ST-type pension, similarly to the S-type pension.

The average SI-type pension is similar to the early retirement pensions and was equal to CZK 14 358 for men and CZK 12 389 for women when received solo. The relative gender gap is lower, with men's pensions only 15.9% higher than women's, i. e. 11 pp lower than in 2010. In the case of combined pensions, the average amount for men is still 14.4% higher.

Compared to the pensions mentioned above, SRN-type pensioners have to accept a significantly lower amount of money. Not having completed the sufficient insurance period means that men on average receive CZK 5 906, while women get CZK 5 076. The 16.4% higher pension for men stays the same from the long-term perspective, and the difference is more interesting for pensions received in combination with a survivor's pension, because men have an average pension that is 22.1% lower than the one women get, and the difference has decreased by 9.1 percentage points since 2010.

Other pensions are under-represented and gradually disappearing. Looking at pensions received independently, the average pension is CZK 13 204 for women and CZK 15 868 for men, which is 15.1% more, and in comparison to the year 2010 the relative difference has increased by 2 percentage points. Women can be satisfied by the fact that survivor's pensions are more frequently awarded to women, but for the most common S-type pension, their combined pension will on average be CZK 886 lower than men's pension received solo and for early retirement pensions the difference is CZK 86. In the case of the third most common type of pension, SI-type, women's combined pension is higher than men's solo pension by CZK 501 on average.

Tab 3: Quartile ranges of old-age pension amounts at the end of the year 2020

	Men	Women
Old-age pensions solo	14000-17500	11500-14800
Old-age pensions S-type solo	15000-18500	12400-15600
Old-age pensions S-type combined	16600-19500	14400-17000
Old-age pensions ST-type solo	12600-15800	10500-13200
Old-age pensions ST-type combined	14800-17500	13000-15400
Old-age pensions SI-type solo	12800-16200	11000-13800
Old-age pensions SI-type combined	15600-18500	13800-16000

Source: compiled by the author

For a better overview of the variability of pensions, the table 3 shows quartile ranges of pensions generated from ordinal variables with a width of 500 or 200 CZK. These ranges contain the middle half of pensioners of each pension type.

Men were mostly given wider and higher ranges. The widest spread was observed in relation to the S-type pension received independently, and this pension also shows the largest differences in the comparison of the lower and upper bounds of the spread between the sexes. For all pensions in the table, the upper limit of the male range is between 2,100 and 2,900 CZK higher than the upper limit of the female range, and the lower limit differs by 1,800 to 2,600 CZK. These differences confirm the findings of the differences in average pensions between the sexes ranging from 1,800 to 2,800 CZK, as mentioned in the chart no. 3, but these are not only affected by outliers but are generally biased in favour of men, as shown by the quartile ranges.

Conclusion

At present, pensions are divided into six types according to the statistical yearbooks of Czech Social Security Administration, but two of those types are no longer being granted. For newly awarded pensions, there is no significant difference in the representation of pension types according to gender, and between 2010 and 2020, 58.0% of newly awarded pensions were S-type, 33.0% were ST-type, 8.8% were SI-type and 0.2% were SRN-type. On average, new ST-type pensioners are the youngest, followed by S-type pensioners. In both of these pensions, on average women tend to be 1.5 years younger than men at the time of the awarding of pension. For the other pensions, the gender difference is not clear, as while the SI-type pensioners retire at age 65, SRN pensioners start receiving their pension later.

Women represent 60.1% of the 2.4 million pensioners receiving one of the old-age pension type at the end of 2020. Although the number of pensioners is increasing, the share of women is decreasing. In total, S-type pensions are the most common (68.1%), followed by ST-type pensions (27.1%) and SI-type pensions (4.4%). S-type and SI-type pensions are more common for male pensioners compared to the total pensioners population, whereas ST-type early retirement pensions represent a larger share among female pensioners. With increasing age receiving old-age pension in combination with widow/widower pensions becomes more frequent.

The structure of pensioners shows the highest proportion of women around the age of 60, when mainly women start receiving pensions, with their share being above four-fifths in the 60-62 age groups. The local minimum for the percentage of women among pensioners is 54% in the 65 age group and the share increases linearly in older age cohorts due to higher male mortality rates. The share of old-age pensions awarded together with survivor's pensions also increases with the age of the pensioners. For women, the increase is more significant, because men are more likely to pass away than women, and because women are more often married to an older man. In the entire population of pensioners, women receive an old-age pension together with a survivor's pension in 34.5% of cases, whereas men in 9.5% of cases. While SR-type and SD-type pensions are prevalent only in the older age groups and they are gradually disappearing without replacement, ST-type early retirement pensions are only now just being introduced into the records and their share among pensioners is likely to keep rising in the upcoming years.

Newly awarded old-age pensions are on average granted at a higher value compared to the average pensions of all pensioners. In general, men are better paid than women, with differences around two thousand crowns for the most common pensions. Although women are more likely than men to receive a survivor's pension in parallel with their old-age pension, for the two most common pensions (S and ST) this is on average not enough to match the old-age pension received solo by men. It is the survivor's pensions that are higher for women than for men, because they compensate the loss of income of the deceased, which is on average higher in the case of a death of the man. Differences in pension levels were also observed using quartile ranges, which confirmed the overall bias in male pensions, which are higher, and that the difference in average pensions between the sexes is not caused by outliers only.

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