WILL MORE PERSONAL SAVINGS SAVE THE CZECH PENSION SYSTEM?

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Abstract

This paper is focused on the Czech pension system and aims to define limits and discuss possibilities of handling the expected tough periods that are going to occur during this century, showing that the task is to overcome them using fiscal and pension policy since based on demographic projections the situation is going to improve again approximately after year 2070. It explains the difficulties with providing solidarity, demographic behaviour and indexation of pensions. It shows and discusses the possible adjustments' options (pension age, insurance rate, replacement ratio, fiscal subsidies) and ways of shifting the pension expenditures within public budgets, while providing solid coverage within mandatory pillars and useful options in voluntary pillars. It emphasizes the importance of participation and employment levels for pension systems. The findings are that we need to design and implement better pension pillars where our contributions will go – both in mandatory and voluntary part, and the fiscal plan for covering the tough (but temporary) period that is ahead.

Keywords

Pension System, Social Insurance, Government Budget, Pension Policy

I. Introduction

The Czech pension system seems to be suffering from lack of clear strategy and underwent several reform attempts which were not successful. Most prominent example was so called "second pillar" of pension system, which was introduced with an option to reallocate part of social insurance contributions into private funds in 2013 and abandoned few years later, with problematic handling of the money that has been paid there by the participants (Potůček, 2017). By the way, this pillar was typical example of being advantageous for males with above average income, and less advantageous or even not suitable for lower income groups or for those who expect having larger gaps within their working career (because of caring for children or relatives, or because of unemployment or longer illness). This limits its capability to adapt for issues that are in front of us – especially the demographic transition and worsening of dependency ratio (Fiala & Langhamrová, 2013), that is expected to double in the next 35 years (OECD, Pensions at a Glance 2017, 2017). What is worse, the interpretation of those issues is done improperly and they are used as a tool to further undermine the basic elements of good-working pension system, such as social insurance principles and mechanisms, government guarantee of replacement ratio based on mandatory payroll payments and solidarity which manifests both in the certain level of pensions that is available for every citizen who participated in social insurance system and at recognizing social situations such as parenthood, longer illnesses and unemployment as factors that ought not significantly decrease the citizen's pension level.

This paper is mean as a discussion paper for the conference, the author is aware that it raises some questions that it does not at this stage of research fully resolve. Also, it relies on the existing knowledge in the form of fiscal and demographic projections and calculations, some on them utilizing "no policy change" approach (Národní rozpočtová rada, 2018) which may

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emphasize their "catastrophic" character, if nothing is done. That is frankly methodologically correct and it is highly important and praiseworthy that they have been published (Národní rozpočtová rada, 2019), however the problem is that the general discourse that can follow up and sometimes even does follow up after unveiling these analyses is that "there will not be enough money for pensions anymore, situation is fiscally unmanageable".

Simultaneously, many economists in social media and newspapers state that "people should save more for their pensions" (IDnes, 2019), also the marketing of pension funds works this way (Komerční banka, 2019). Especially tempting and intriguing, but in practice largely unusable is the philosophy, that the pension security be changed so that everybody create voluntarily during his life some capital reserve ("savings") that he will at older age utilize on its own or even partially pass it to his descendants if he for some reasons would not spend it. That is simply not enough and for majority of the citizens this will not provide adequate pension security, leaving the government in risk of providing large social groups with additional support outside of pension system (Aaron, 1997), also because of myopic behaviour, market failures and incomplete information in this area (Barr & Diamond, 2006). This does not neglect the sense of voluntary fully-funded pension pillar (Štěpánek, 2017), (OECD, 2018), which should exist and provide option for additional replacement ratio level, but optimally also with life-long benefits (lifetime annuity) – which currently occur only rarely in Czechia within the third fully funded pension pillar. And as shown in the OECD data, mandatory (and occupational) pension schemes dominate to European countries (OECD, Pensions at a Glance 2017, 2017, p. 133)

To the contrary, this paper works with the limits and caveats of pension system's configuration that are raised in the scientific discourse and searches for possible pathways to maintain the sustainability and overcoming the tougher periods that are coming. The methodology used is highly simplified approach similar to the one that is used and data driven by OECD in a number of key publications about pensions (OECD, Pensions at a Glance 2017, 2017) (OECD, Preventing Ageing Unequally, 2017) (OECD, 2018); it includes applicable principles and design limitations and observing the reality of pension systems, it searches for best ways ahead that are compatible with existing theoretical knowledge.

The aim of this paper is to define limits and discuss possibilities of pension system's configuration and think about how to manage expected imbalances within public finance. We make scientific polemic with the discourse that treats the current pension system as having inherent properties that lead it into inevitable crisis, rather we analyse individual factors and try to classify them according to the effects on the system.

We can formulate two research questions, although as we have already stated this paper cannot given its scope and character provide complete answers to them, so we include them primarily to better explain the research direction. The first one is like the paper's title: whether more personal savings themselves resolve the problem of pension system, as it has been suggested both by some experts and done by some citizens that declare minimal belief in current pension system. The second one targets the roots of the expected deficits in the pension system and asks whether we can (to some degree) distinguish between their causes and adjust the financing according to the nature and source of occurring imbalances.

We work with the hypothesis, that there are two key issues with current pension system's configuration in Czechia, that need some policy reaction, but none of them is unmanageable within the framework of pay-as-you-go pension system and fiscal space. They are solidarity levels and expected demographic development. Of course, it is a bit tough that they occur at the same time, but they can be also resolved at the same time by adequate policy changes. The basic idea behind the management of the pension system ought to be based on solving the causes, not replacing the basic mechanisms with different ones just because the tougher times occur. To say it clearly, the settings of the pension system must be in accord of what the policy makers

want to achieve, how the pension system should behave according to the policy goals, we must not sacrifice the valuable properties of pension system because of tougher times ahead. On the other hand, of course, we must respect economic reality and projections and adjust the pension financing accordingly, but we ought to correctly recognize the nature of causes – which problems are for pension system and social insurance "by design" (endogenous) and which problems occur temporarily albeit for longer periods or are simply exogenous. Given the nature of economic science, such as the debate of the character and endogeneity (Rochon & Rossi, 2013) or exogeneity of money alone (Davidson, 2006), these categories can be difficult to apply as in the end every relevant aspect influences the overall balance of the pension system, but using these categories to think about the determinants of pension system can be useful.

II. Main neuralgic issues of current pension system

Solidarity

The solidarity in the pension system is rather complicated to handle, because if it is not covered by general taxation, it reduces the replacement ratio and equivalency level for part of the participants (usually those with higher incomes and those who did not have social situations that are covered by solidarity) in social insurance. Indeed, part of the premium paid is used to cover defined social situations and decreases the equivalent link between the premiums paid and earnings. On the other hand, in the pension system, it is necessary to address the situation of low-income citizens whose earnings are not enough to convert to a pension to ensure an adequate standard of living. Furthermore, it is appropriate to compensate for longer illness, unemployment and childcare in social insurance.

The current configuration of social insurance largely relies on reduction levels (income thresholds that reduce the benefits' level), which make Czech mandatory pensions approximately from two-thirds solidarity based (because of the presence of basic pension amount that has been recently increased to 10 percent of average wage and reduction level in the percentage pension amount). The results are, that the replacement rate in Czechia highly varies by earnings level – man with income 0,5 of mean has 88,3 %, with mean income has 60 %[2] and 1,5 of mean has just 48,7 % net replacement rate (OECD, Pensions at a Glance 2017, 2017). We must note, that reduction levels were not originally present in social pension insurance and by design, they need not be introduced in social pension insurance at all, making the benefits (almost) fully earnings-related. Despite that, Czech pension insurance similarly to e.g. the American Social Security uses these levels to increase "internal pension solidarity" of participants with higher wages and those with lower ones.

Regarding degree of solidarity in pension systems, we can rely on three basic philosophies. We can either take pension as a universal flat-rate benefit, available to every senior citizen that has the same or remarkably similar basic needs and design the mandatory part of pension system according to this principle. This will result into high progressivity index (near 100 – such as New Zealand or United Kingdom according to OECD tables). Or we can take pension as a close approximate of individual wage level during the working career (earnings-related benefit), and fully utilize the social insurance principle. This will result into very low progressivity index (near 0, such as Sweden or Finland). Or we can use some combination of those philosophies, but there is potential caveat with the understandability for the participants and their behaviour within the system. Most people do understand income taxes as a non-equivalent payment, some people understand insurance principle as risk-spreading principle, also with the universal participation for events that can happen to everybody (such as old-age). This leads to social insurance approach, but when the reduction levels in social insurance are very high, the

[2] Which by the way also means that current replacement rate for average man earner are not that low as it can seem from the general discourse.

participants start to reject or diminish the social insurance participation, whenever they have a possibility to do so. This is among others the case of Czech self-employed persons, which even have been informed by Ministry of Work a Social Affairs that their expected pensions will be low if they do not participate "enough", but still majority of them pays only required minimum into the system. What is behind it? Part of them has not got enough resources really, and (probably larger) part just saves their money "aside" into standard saving or even investment products, hoping that they will have been creating some capital reserve while they are working. And they hope to utilize it when they get older, which is however in most cases myopic behaviour and relying on "self-insurance"; the experience from OECD countries show that this approach does not in many cases lead into adequate coverage and consumption smoothing as well as fulfilling other functions of pension system (OECD, 2018).

Therefore, especially in the environment where the participants can somewhat "optimize" their obligatory payments into the system, it is worth to design social pension insurance component so that mirrors the wage level into the pension level (high level of equivalency typical for social insurance). That may mean, according to recommendations by (Vostatek, 2016), splitting the pension benefits into the tax-financed basic pension benefit and social insurance pension benefit, of course from the participant's point of view then summed up into his/her guaranteed pension. For the Czech environment this is the suitable way ahead. It is worth noting that it has some consequences. First, we shall create a part of pension system that will be financed from general taxation, therefore social insurance will no longer be the only resource that provides the mandatory pension financing. Second, this will decrease the social insurance contribution rate and will call for introducing more progressive income taxation. Third, the solidarity part of pension will move mainly into this tax-financed pillar, in the social insurance pillar mainly the compensation for periods of parenthood, unemployment and longer illnesses will stay (and even those can be subsidized on virtual pension accounts from government budget if we want to follow Swedish extreme example of full NDC equivalency).

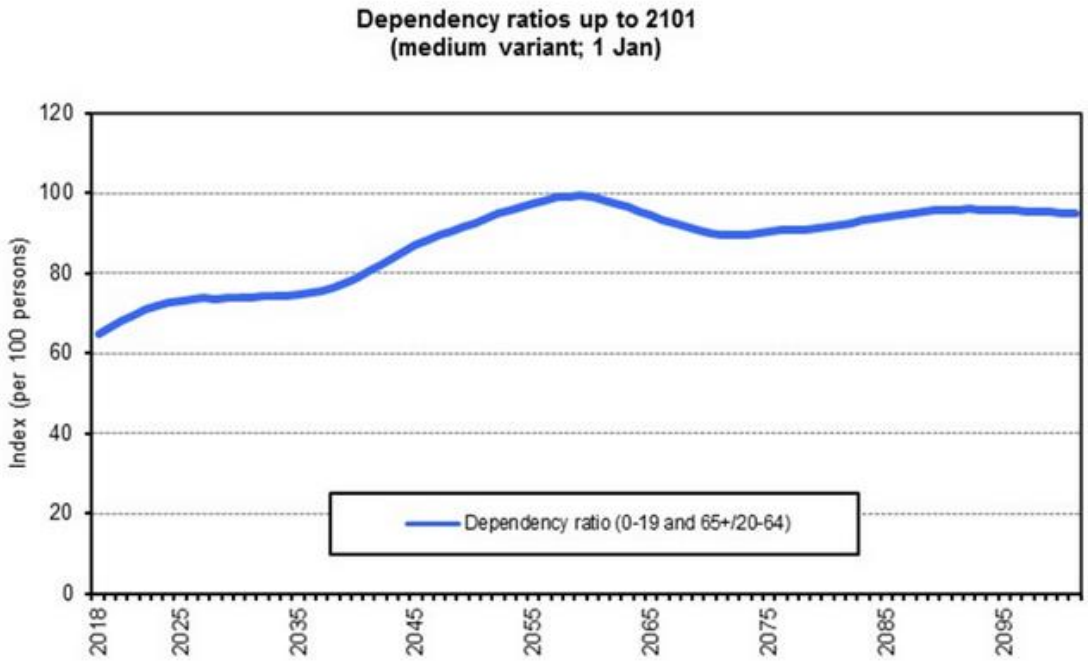
This splitting can help also to resolve the consequences of demographic development described below. Because part of the pensions will be financed directly from general taxation, the social insurance imbalances will be smaller in volume and the rate can be "newly" adjusted as needed. This does not diminish the fiscal significance of the whole pension system and expected deficits but shifts the burden partially to general taxation which is "larger" resource that social insurance that is tied to payroll and labour costs.

Demographic development

There are several demographic projections that show up the probable development during the 21st century (Fiala & Langhamrová, 2013), (Fiala & Langhamrová, 2014), (CZSO, 2018). The basic medium projection of dependency ratios for a lengthy period[3] is shown on the figure lower. On this figure, share of pre-productive and post-productive age population to productive age population is used (0-19 and 65+/20-64) is used. More data dynamically adjustable by selected year and age levels can be found on the CZSO web site (CZSOb, 2019). Also other more sophisticated types of dependency indices can be constructed as shown in the reference in the following paragraph.

[3] Such a long projection is of course subject to many factors that can happen, therefore is less precise than shorter projections, but since in this paper we work with pension system and talk about the development in whole 21st century we use this graph for illustrative purposes.

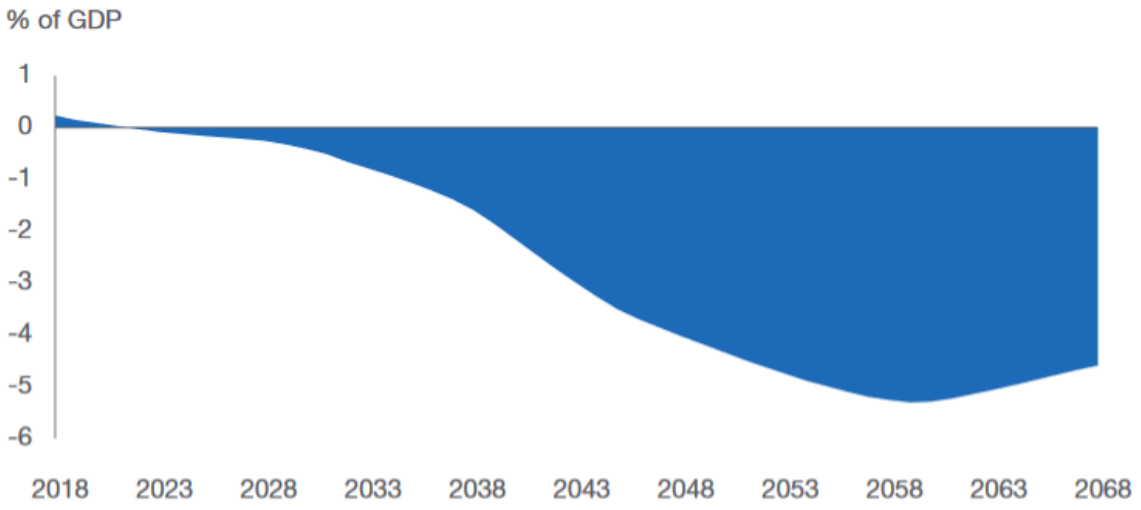
Figure 1 Projected dependency ratios up to 2101



Source: (CZSO, Dependency ratios up to 2101, 2019a)

The problem with demographic behaviour is of course tough to resolve for **any** pension system. But it should be divided into two main parts – the longevity risk (increasing the life expectancy), and the relative number of people that are entitled for pension benefit, related to dependency ratio's level and more precisely to the index of seniors' dependency (Fiala & Langhamrová, 2013, p. 349). This number is of course partially related to the life expectancy (because if people live longer then the dependency ratio will be worse even if the count of pensioners and economically active is the same), but also it relates to the number of people that are born and economically active within particular country – e.g. fertility level and employment level, as well as shape of population pyramid (CZSO, 2018). And this second part is the one that makes the biggest problems with current pension systems. Moreover, these problems are not endless, the fiscally worst period as shown in the analysis of National Fiscal Council is approximately between years 2040-2070 (Národní rozpočtová rada, 2018), after this period the situation will gradually improve again. This is shown on the next picture and was supported by the previous demographic analyses, that evaluated the effect of the variants of pension system configuration on its balance in the future (Fiala & Langhamrová, 2014). They show that the worst system imbalances because of demographics will occur in years 2045-2065, **after that period the situation will start to improve and near the end of the 21st century (around years 2085-2090) the system will have positive balance again**. The level of deficits (60-120 billion CZK annually in the worst years depending on the projection variant) relates mainly to the insurance rate and the rate of economic activity (employment rate) (Fiala & Langhamrová, 2014). So, the basic message from demographic and socioeconomic analyses is yes, there is a demographically tough period ahead, but it will improve again (consistently with social insurance logic) and the task for public finance is to overcome that tough period.

Figure 2 Annual balances of the pension system



Source: Národní rozpočtová rada (2018)

When utilizing the results of the demographic analyses, we can say that the longevity risk itself (especially of the current generation) should be manageable within social insurance's settings – especially by adjusting the social insurance rate, since it reflects the necessary resources to pay the pension benefit at desired replacement ratio for expected number of years in pension. Theoretically, if we adjust the rate within the stationary population not for the statutory age, but the expected number of years in pension, we can theoretically shift the pension age so that within the stationary population the insurance rate stays approximately the same for the specified number of years in pension. From this we can deduct, that the social insurance rate can handle the life expectancy changes by design well.

But the regressive population type alone is hard to manage within social insurance, because then the rates would go sharply up and moreover, the balance fluctuates based on the number of people in overlapping generations. We can theoretically even say, that during the progressive population situation (relatively higher share of economically active and younger cohorts), we can make savings from positive balance and utilize them later in case the population is going to be regressive for some period. But we in the past did not make this for several reasons – we might have believed that the population will at least be stationary all the time or we had other fiscal priorities such as in 1990s when the surpluses of pension systems were spent within the government budget on other expenditure. Of course, we can reflect smaller demographic fluctuations also in the insurance rate and the usual management of social insurance system does that – but for the purpose of thinking in this paper, let us imagine that the social insurance rate reflects the situation with stationary population and equal social insurance balance (no deficit, no surplus). Then in the progressive population there is going to be surplus because of "good demographics" – more economically active people, in the regressive population there is going to be a deficit because of "bad demographics". These thoughts are of course complicated by the fact, that simple dependency ratio indicator does not differentiate between the influence of rising life expectancy and lower "counts" of economically active generations.

Concentrating on the demographic aspect and the intergenerational solidarity problem, we can say that one of the pension system's role is also to spread the burden of population's fluctuations between generations. If we talk about ethical aspects of this spreading, it is debatable if the current generation should bear all the costs of regressive population and not having "enough" children in their pension security payments, or if we should find also supplementary resources – especially given in the light the previous generations had in this light much easier situation

(it was possible just to introduce the pay-as-you-go pension systems and instantly the benefits could have been paid with reasonable insurance rates, such as the development in the second half of 20th century shows).

From these aspects it can make sense to finance the expected tough period also from the general taxation resources. While it may seem like a simplistic call for "another fiscal subsidy", we do not intend to utilize or defend it from these positions. But because of the fact, that the expected imbalances are temporary result of demographic behaviour (they will start to improve spontaneously after 2060) and lower fertility rates of the current population that will enter pension age during the tough period. And, that part of the demographic situation is exogenous to the social insurance system, thus it makes sense to resolve the imbalances from general taxation and not from payroll contributions that social insurance is the part of.

Indexation of pensions

Pension indexation (valorisation) is an important element of pension systems and it mostly depends on public choice priorities. Technically, the indexation itself for the operation of pension systems is not strictly necessary - both the pay-as-you-go social insurance system and the capital systems do it in relation to maintaining the financial value of the paid contributions, other aspects are secondary. Theoretically, in the environment of zero inflation, the basic function of pension system would be just to pay lifetime benefits from specified age based on the contributions paid.

There are basically three major areas of relevance to the problem.

1) The handling of inflation – the value of money and its changes in time in relation to the purchasing power of pensioners
2) The question of intergenerational solidarity in living standards - i.e. the standard of living of an economically active population expressed by the wage level and living standards of pensioners expressed by the pension level and the possible (re)distribution of these effects through pension system
3) The question of maintaining/increasing the value of paid contributions in time in general - financial techniques of capital appreciation without a direct link to the country's wage or general economic level

This classification is quite broadly defined - in particular, its third point extends mainly to the fully funded pillars that must rely on capital markets to cope with inflation or generally said indexation necessity. The investment returns must be high enough over time to combat inflation, pay the management fees and ideally also provide increase of real value of the contributions. This is the inherent property of fully funded systems – and one of their main risks, since we cannot do systemic indexation there like we do in pay-as-you-go systems.

In case of pay-as-you-go system, the system can (but need not) provide indexation of existing benefits both according to inflation and according to wages. Of course, this is limited by the system's balance, that is why we use the phrasing can – but need not to. Technically, however, the pay-as-you-go system works with the automatically increased inflow of money based on payroll contributions – from current level of wages, which represent current level of productivity and standard of living of current generation.

In the case of the capital system, the situation is different, as there is no comprehensive pay-as-you-go fiscal tool. Thus, at the time of the transition to the pay-out phase of the saved funds, only standard financial instruments can be considered - a lifetime annuity payment, which may reflect the potential appreciation of the "remaining" (unpaid) funds. Even if inflation or wages increased, it has no noteworthy influence on savings, especially those already paid in the form of an annuity, and the capital system is in a much more difficult position in terms of valorisation.

This applies in particular to wage growth, since if we can assume that inflation growth could be reflected in the financial market instruments in the annuities, wage growth, if it occurs, has no direct impact on the annuities and is possibly reflected in the future generation savings, not the living standards of existing pensioners.

In other words, if we translate the characteristics of each system into those three points, then the pay-as-you-go system in case if the national economy develops positively (which can at least cover inflation if collective bargaining works) increases premium payments, which will enable the valorisation of existing pensions to be carried out even on the principle of intergenerational solidarity, because through this system the economically active generation pays to the economically inactive. Conversely, in the capital system, this is dependent on the functioning of financial markets and, possibly, the indexation of annuities in relation to inflation; wage growth will not be directly reflected in existing pensions, as economically active generations will save for their own pensions, and economically inactive generations' pensions will pay off their own savings (i.e. other money).

It follows from the above that the part of the system, which is important from the point of view of pension valorisation, is for the Czech conditions the first, pay-as-you-go pillar, where public policy can directly influence the rules and possibilities for pension valorisation. However there is also another form, discrete fiscal transfers for pensioners that we have seen in the form of 1200 CZK pension supplement (Česko, 2015), which results in one-time pension increase, but they are highly non-systemic in this regard. Although they show that the question of indexation and living standards of pensioners is empirically important and no politician today may ignore them, it is highly desirable to incorporate such measures in the social insurance system rules that will lead to continuous automatic indexation of pensions without a direct link to the political cycle and public choice.

III. Policy options and adjustable parameters

There are only limited options what we can do with the pension system to adapt for the unfavourable conditions.

- Change the statutory pension age
- Change the social insurance rate
- Change the replacement ratio
- Subsidy the pension system from general taxation
- Improve the labour market participation rate in contracts or statuses that are subject to social insurance

Changing the statutory pension age

This is an option that most prominently solves the problem, since it directly changes the volume of pension benefits that must be paid every year and changes the dependency ratio into more favourable one. Also, if it is set up with the desired expected number of years in pensions in mind, it is consistent with social insurance approach and maintaining its balance over time. However, using this option has got, given current situation, several big caveats. First, increasing the statutory pension age need not mean that the all the citizens will utilize it. Either, if there is such an option, they can take their pension earlier at the expense of lowering monthly pension benefit, or if that is not possible, they might fall into unemployment, or worse, into invalidity. With this there is connected an important attribute of pension systems – where they shall be, by design, constructed as a tool for solving presumed invalidity because of age, or if they shall provide (also) a reward benefits available from certain age as a social advance of modern society. Since the Second World War, this reward aspect has been more prominent and when debating pension system, we should be clear about the character of the changes from this point

of view. This is important also because modern medicine can construct indicators such as Quality Adjusted Life Years (QALY), which evaluate the quality of life and the presence of diseases (Huang, Frijters, Dalziel, & Clarke, 2018) that can decrease it and thus can help us to tell whether the pensioners can still (and how long) enjoy their pension years and lead active life while they are backed by solid social security. It is a tough task for health systems to help people also enjoy the pension years, because the later the pension age will be, the bigger health risks a person faces.

The statutory pension (retirement) age has also important motivation aspect for the participants. While we know that we are in the social insurance area and the basic principle of social insurance is that the event can happen or not (while insurance payment is mandatory), when increasing the statutory age, we might run into the situation that more people will not enjoy their pensions for a lot of years or even will not enjoy it at all. We should see that as the mandatory or recommended period of paying insurance contributions increases, the perceived burden of situations in which a pension scheme participant does not live up to a retirement age, although he previously paid premiums for 30-40 years, are growing. These phenomena have always been part of social insurance (because after all it is still insurance), but the system participation time (vesting period) was not so long on average. When not managed properly, from psychological point of view, this can increase the aversion to the social insurance (or pay-as-you-go principle in general). Therefore, using reward principle also increases the overall acceptance level of social insurance.

Partially, the problems of pension age can be resolved by schemes that allow individual setting of retirement age and arrangement, this can be better than changing pension age for every participant. As OECD's recent editorial says (OECD, Pensions at a Glance 2017, 2017, p. 9), older workers are diverse group and flexible retirement is a double edged sword, since it can increase participation rate and living standards of those who want and can work longer, but it can also lead to underestimating financial needs in pension and leaving early with reduced benefits. Also it may be hard to realize to those with lower overall incomes and those that cannot find good opportunities on labour market, which may force them to retire earlier.

Changing the replacement ratio (in time)

This option relates to the pensions' level because generally, the replacement ratio is proportionally related to the insurance rate. But since the pension system covers the entire life, a question of indexation (already discussed in the second chapter) affects the replacement rate levels in time. The basic rule of social security is that once a benefit is given to a citizen, it cannot be (nominally) lowered or returned while the conditions that must have been fulfilled remains true (Krebs, 2015). That should be respected under any realistic circumstances. Therefore, we cannot realistically think about lowering existing pensions in case of tough times, but on the other hand we can work with the mechanisms of valorisation and indexation as they have been described before. While their exact construction is above the scope of this paper, we can say that generally in the environment of Czech national bank's inflation aim being 2 percent, the pensions lose (at least) one fifth of their real value every 10 years if not being indexed at all[4]. Therefore, while of course not desirable (also because it would create larger differences between cohorts of pensioners), just by stopping indexation of pensions it is possible to lower (in real terms) the replacement ratio for existing pension benefits.

Changing (or reallocating) the social insurance rate

Other things equal, changing the social insurance rate is the true method how to resolve the imbalance of social insurance, by increasing the incomes of the system. The problem is, that the current rate in Czechia is already high amongst OECD countries and overall tax wedge is

[4] More exactly we could use the expression $(1+0{,}02)^{10}$ if we want more exact future value computation.

also high for employees. Therefore, the options of doing this are limited, practically they can be done only when also changing the structure of compulsory payroll payments so that the overall burden on work is not increased. On the other hand, we can see that the current social insurance rate of 28 per cent also includes disability and survivor pensions, and for the old age pensions approximately 22-23 percent of gross wage is paid really. Existing analyses show, that the insurance rate greatly affects the balance of the system even in the demographically tough situation – Fiala and Langhamrová (2014) showed, that if the whole 28 percent would be allocated to old-age pensions, annual deficit in the worst years would decrease by approximately 40-50 billion CZK.

If we are working with stationary population (where the number of citizens is constant), there is no reason why social insurance cannot be set up and would not work with equal (zero) balance – on a non-profit basis, with any total number of people. We can always set the social insurance rate at such a level, which covers the desired replacement ratio and the statutory pension age that directly determines the number of years in pension and pension benefits that must be paid.

Having in mind the character of the pension issues, we can see why it is wrong to undermine social insurance just because we expect demographic decline. First, it is not a failure of social insurance themselves, but the unfavourable demographic conditions that the pension system must handle. Second, these issues will not be resolved by individual personal savings, since they will weaken the social insurance system even more and will not provide any better or more resources for financing pensions – they offer primarily the psychological advantage that the participant "has got its own money" somewhere, decreasing the dependency on the younger generation which is supposed to shrink.

As for capital-based (fully funded) pillars' role in the pension systems, we need not neglect them as a whole or in principle, but we must give them proper position within social security. First – they are worth using primarily within the voluntary part of the system and they should not be pushed into the mandatory part, especially not as a tool to increase available resources or replace "inadequate" social insurance contributions. This can actually help their character, because when pension funds must actually convince future clients by the quality and rentability of their products to buy them, not relying just on government subsidy or even compulsion to participate, the product should have then higher quality and better rentability than they do now. Here it is worth noting, that none of the transformed Czech pension funds overcame inflation in 2018, inflation being 2,1 % and the average returns were 0,7 % (Urbánek, 2019).

If for some theoretical reason the bigger utilization of fully-funded principles be desirable in the mandatory part, we are in the compulsory area and thus it makes no sense to choose investment strategies individually, this can be much more effectively done at the national level spreading the risks by government investment agency that could be created for that purpose and driven by professional managers the same way as other businesses in this area are (Vostatek, 2012), in simplest form done by one high performance computer with investment stock exchange software (Kotlikoff, 2019). Still, given the volatility of capital markets, the average level of real investment returns and other important characteristics on pension financing options as we see on Czech pension funds behaviour, social insurance can at current macroeconomic conditions be usually better and more cost-effective option to provide earnings-related guaranteed replacement ratio.

On the other hand, in the voluntary part of the system, the individual decides on his or her investment strategies and volume alone, by freely choosing the product on the market.[5] And, because he is backed by guaranteed pension from social insurance, he can to some degree decide

[5] While in Czechia it has not been used, we must note that in some OECD countries occupational pensions play significant role in pension security.

about the time when he needs to get benefits, overcoming to some degree the problem of possible momentary lowering the capital value because of economic downturn or capital markets turbulences.

IV. Discussion and conclusions

Czech pension system needs good governance and management to go through the next period. The biggest threat are reform attempts that undermine basic principles of social security (universality, dependability, systemic targeting desired solidarity and equivalency) and usually must be dismounted some years after they are started or require increased social support for large social groups that do not get adequate benefits after their introduction. Simultaneously, there is surely room for improvement of current system and to achieve it, we can provide the following recommendations.

1) Split the mandatory part of the system into tax-based basic pension (flat) and social insurance-based pension (earnings-related), targeting adequate replacement ratio 50-60 per cent of the previous wage from mandatory pillar (63 percent is current OECD average for mandatory schemes – but they sometimes include small fully-funded pillar such as FDC in Sweden, which we recommend for Czechia as voluntary at this stage). This step will diminish social insurance rate and increases fiscal space for pensions through using general taxation, as well as decreases the dependency on social insurance in the areas where its (primarily earnings-related) principles need not be used (such as basic "flat-rate" pension level for every participant).
2) Improve the participation rates and payment levels of the self-employed persons and other social groups that currently avoid their payments into social insurance – this can be also helped by the previous splitting, because it will increase equivalency in the social insurance part.
3) Be very careful with increasing general statutory pension age above 65 years of age (make it option of last resort), rather create options and incentives for individual adjustment of pension age and degree according to career preferences and real ability to work/participate. An example of such a pension system extension can be found here (Mertl, Mihola, Valenčík, & Bosák, 2018). Generally, the higher participation on labour market (in all cohorts, not only those nearing pension age), the better balance of pension system will be. On the other hand, we must be careful about the replacement ratios for the participants that will not be able to realize or prolong their active participation because of objective health, personal or labour market issues.
4) In the voluntary part of the system, offer fully funded pillar with low management costs and low fiscal subsidies, that alone provides consistently higher returns that bank saving products. If well-run social insurance pension pillar with reasonable equivalency exists, offer also voluntary payments into social insurance as a competitive product.
5) In the fiscally toughest period (approximately during years 2045-2065), that probably neither the usual parametric methods of stabilization or economic growth manifesting in higher wages will fully cover, consider providing annual fiscal subsidies into the pension system, or simply handle the pension deficit as the part of overall government budget balance, given the perspective that this situation is temporary with inherent tendency for improvement after 2065, and significant part of the causes does not lie within the basic mechanisms of social insurance.

An important point for further research is to quantify which part of expected imbalances is because of the increasing life expectancy alone (regardless of the fertility and unemployment rates), and which part is due to low fertility, situation on the labour market and resulting worsened dependency ratios with relatively high number of pensioners (even if their life expectancy would be the same as in the previous generations). This is above the research's

scope presented in this paper, and the calculations might be equivocal (hard to separate the influence of the factors), but we recognize that it would be highly useful to explore this direction to give more indication for possible fiscal intervention volume.

Of course, other mechanisms such as social benefits (especially housing ones) can be implemented into the system, which in turn result in a change in the purchasing power of pensioners in relation to development of the national economy and reduce the pressure on pensions – to some degree there is a trade-off between pensions' level and other non-insurance benefits for pensioners. Analogous situation is with the health care financing – good universal health care system reduces the pensioners' direct expenditure on health. We do not want to downplay the role of pension system and buying power of pensioners, just suggesting which other areas nearby pension systems are important for handling the situation if the pension system has problems, and that fiscally we can to some degree decide about the forms of providing social security to pensioners.

Demographic development affects social insurance in several ways – given the social insurance rate corresponding to the stationary population, reserves/surpluses may be created in the stage of demographic growth (progressive age pyramids), losses/deficits are created in the demographic decline phase (degressive age pyramids). It is a legitimate question from which sources to cover the demographic downturn if a reserve was not created at the time of demographic growth or the reserve was released for other purposes. Either the deficits can be covered annually from taxes or government bonds within the government budget balance, or a reserve (swing) fund can be created to reduce the cost of demographic decline through resource accumulation and potential investment at national level. Alternatively, pensions can be reduced in real terms through lesser indexation, and the demographic decline paid at the expense of a given generation of pensioners, or the insurance rate can be increased and paid at the expense of a given generation of workers (economically active citizens). Obviously also a combination of the above options is possible.

We can say with certain simplification, that the part of demographic problems, especially the ones with lower fertility, the labour market participation rates, intergenerational imbalances and demographic patterns and therefore worsened dependency ratios are exogenous to the pension system and especially social insurance. Thus they can and should relate also to the overall fiscal situation across the generations through budget balance and the tax system.

On the other hand, the life expectancy, pension age, replacement ratio and wage levels are endogenous to social insurance and therefore should be reflected directly in the insurance rate. Also, endogenous for the social insurance is the target solidarity and equivalence level, including the possibility to create tax-financed flat-rate pension pillar.

To make final answer to the statement that became the title of this paper: no, just more savings alone will not save the Czech pensions. We need robust pension system with incentives for active participation, solid coverage for situations that cause longer loss of wage throughout life and lifetime benefits that are reasonably indexed. In addition, majority of employees pays now considerable share of their wages into pension system already. So, primarily we need to design and implement better pension pillars where our contributions will go – both in mandatory and voluntary parts, and the fiscal plan for covering the tough (but temporary) period that is ahead.

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