Pensions on the run

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COMPARATIVE STUDY

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Introduction

Financial crisis which started at the end of 2007 resulted in Europe not only in economic recession but also in fiscal crisis. Average deficit in the EU27 in 2009 reached as much as 6,7% of GDP, and at that time not all hidden fiscal mines had yet exploded. Naturally, it resulted in pressure on consolidation of public sector balances. As the public pension schemes represent the most expensive government policy, they became the target for cost cutting in most of the countries.

Individual countries have chosen different approaches and different measures to tackle the consolidation problem via pension system. Their selection was highly dependent on the following factors:

1) Size of current public deficit and public debt of the country
2) Size of current deficit of pension system and availability of alternative measures
3) Size and urgency of aging problem (demographic changes)
4) Political acceptability of pension reform

Some countries reformed their public pension schemes with respect to the problem of ageing before the crisis. Most developed pensions systems have already implemented automatic balance mechanisms and the main task of governments was to sustain the public and political pressure calling for unblocking these mechanisms, which limit the growth of pension's bill during the period of growing unemployment or negative economic growth. On the opposite end of the spectrum, other countries had to implement deep reforms which significantly and permanently influenced the generosity of the pension schemes. The level of aggressiveness of these measures was highly dependent on willingness of the political class to enter this "forbidden" zone, as restrictive policy in the pension area usually leads to significant drop in popularity of relevant parties. Therefore, the size of actual public deficit and unavailability of alternative measures facilitated the reluctance of political class in adopting these reforms.

In this paper, we analyze the "pension" response of governments in Slovakia, Bulgaria and Poland during the post-crisis period with respect to sustainability of the PAYG[*] systems. In the first part we describe the political context and adopted measures. We outline and compare basic parameters of public pension schemes in these countries. In the second part, we analyze and compare the qualitative parameters of post-reform pension systems. We try to answer the question whether popular labeling of PAYG schemes as unsustainable is correctly used, or some changes in their parameters would allow for their conditional sustainability. In the last part we discuss potential measures, necessary for either financial balancing of the systems or their structural changes.

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[*] PAYG (Pay-As-You-Go) is an unfunded pension scheme where pensions are paid out of current taxes and social security contributions of working population. The sustainability of such a system is largely dependent on demographic development and economic growth.

PART I
Pensions always on the table

Slovakia

The structural reform of the pension system took place in 2003. Based on the recommendations of the World Bank and the IMF, an obligatorily funded pillar was introduced, redirecting 9% of gross salary to a savings account. PAYG system was transformed to an earnings-related scheme, which calculates the pension on the basis of number of years of paid contributions and the earned "pension points", which relate the actual gross salary to the country average for every year. The third part of the pension system was the voluntary funded private system with tax incentives for employees and employers. The reform was adopted by the reformist government, while the opposition objected. Interestingly, although the main opposition party controls now the voting majority in the Parliament, the structure of the pension system has not been changed. Nevertheless, the current government is evidently trying to weaken the funded pillar in favor of PAYG which has been halved if measured by the size of contributions' flow. Originally, the PAYG should have been financed by 18% contributions rate, but it was clear already the following year after the change, that it would not be enough (details will be described in the second part of this paper) and even if surpluses of all the other funds within the Social Insurance Agency were used, tax subsidy would be necessary to co-finance the pensions. Although an increase in unemployment after the crisis in 2009 exposed the deficit character of PAYG settings, no reform had been adopted until the end of year 2012. And even this parametric reform had no immediate effect on the expenditures of PAYG, as its effects were postponed to 2016 and later. The government approached the fiscal problem of pension system from the revenue side. The base for calculation of contributions had been enlarged to encompass larger part of gross income which brought (together with the partial elimination of the funded pillar) desired resources. As a result of parametric changes and revenues increase, the projection of 2060 deficit of PAYG had decreased from about 7% to 2% of GDP[1].

Bulgaria

The current pension system of Bulgaria was designed and adopted back in 1999-2000 with technical assistance from the World Bank. More specifically, the reform plan that kicked off in 2000 foresaw the replacement of the former 100% PAYG system with a three-pillar pension system: the first – PAYG pillar, the second – obligatory capital pillar and the third – voluntary (capital) pillar. The main purpose of the reform was to put the pension system on a more sustainable footing and ensure greater adequacy of future retirement benefits. Initially, the second pillar became obligatory for the so-called 1st and 2nd category of workers, which encompasses those working in specific conditions (miners, pilots, policemen, ballet dancers, etc.). Later, it spread to the mass 3rd category of workers, as 2 percentage points of the pension insurance contribution of those born after the start-1960 was redirected to the second pillar, i.e. to individual accounts with private pension funds. The original plan foresaw a gradual increase of the share of the pension contribution to the 2nd pillar with a step of 1 pp per annum. Yet, the increase was frozen once the pension contribution reached 5 pp, which undermined the original pension reform plan.

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[1] Source: AWG Report 2015, calculations of the Secretariat of the Council for Budget Responsibility

In the meantime, the deficit of the state PAYG system has trended upward to 57% of the expenditures in 2014, meaning that only 43% of the pension payments are financed out of the pension contributions and the rest is covered by other taxes. The unsustainable financial position of the pension system has urged successive governments to seek changes in the pension system, the primary goal being to reduce the deficit in the PAYG system. In 2011 a long-term gradual increase of the retirement age was adopted after lengthy negotiations between social partners. Yet, in 2013 this plan was suspended on populist grounds. Once again in late 2014, the pension system was put back on the table. The legislative package of changes adopted in 2014-2015 foresees, among other things, a gradual increase of the required retirement age and years of service, an increase of pension insurance contributions by a total of 2pp in 2017-2018 and a possibility to opt out of the second pillar.

Poland

Major reforms of the pension system in Poland were introduced in 1999, changing it from a defined benefit to a defined contribution system. The general design of the system followed the World Bank recommendations and was similar to pension reforms in other CEE countries enacted during this time. It was based on 3 pillars, two mandatory and one voluntary. Mandatory pension contribution of 19.52% of gross wage (half paid by employee and half by employer) was divided into 12.22% going to the first pillar, PAYG public scheme run by ZUS (Polish: Zakład Ubezpieczeń Społecznych) and 7.3% going to the second, capital pillar (OFE – Polish: Otwarte Fundusze Emerytalne). The third, voluntary pillar, never really took off and doesn't play any significant role in the pension system. The switch from defined benefit to defined contribution created incentives for longer work and put the pension system on a sustainable path. The remaining deficit in the ZUS was a result of previously granted generous pensions, but the deficit was forecasted to decrease, as new pensioners would receive pensions calculated on an actuarially sound basis. The addition of a funded pillar was meant to diversify the system and make it more robust in the face of demographic shifts. The cost of the transition from PAYG to multi-pillar system was supposed to be covered by the revenue from privatization and supplementary reforms of the pension system (elimination of special pension schemes, increased retirement age). Indeed revenues from the privatization amounted to ¾ of the cost of creation of the capital pillar in the period 1999-2011. Other reforms however were delayed or were not put in place. In 2003, the newly appointed police and military personnel were excluded from the general pension scheme and instead placed into much more favorable (and costly for the taxpayer) occupational schemes. In 2005 the government also gave in to the pressure from miners, setting up another costly scheme for them. The phasing out of early retirement schemes was delayed by 2 years and disability pension scheme is still not aligned to the new old age pension system even today. Also the increase of the retirement age (crucial particularly for women) had not been enacted until 2013 and might be soon undone (more on this in the next section). These factors, combined with the lack of wider reforms of public finances resulted in permanent fiscal deficit, for which the funded pillar was the easiest to blame. So instead of undertaking growth enhancing structural and fiscal reforms in two steps in 2011 and 2014, the Polish government marginalized the capital pillar, taking over much of its assets and redirecting virtually all contributions to the PAYG pillar.

Comparison of the pension systems:

The following table compares the setup of the public pension schemes in the three countries with respect to their parameters.

Table 1: Basic parameters of public pension schemes in 2015

Pension parameters		Slovakia	Poland	Bulgaria
Retirement age	Current retirement age (2015)	62 years (women born before 1960 retire earlier)	65.5 for men, 60.5 for women	63 y. and 8 m for men 60 y. and 8 m for women
	Formula for retirement age	62+ an aging factor reflecting life expectancy	Raising by 3 moths annually	Starting 2038, retirement age will be tied to life expectancy
	Expected retirement age in 2060	65	67	No formal projections
Pensions	Pension benefit formula	Pension benefit=Years of contribution*Number of points (actual salary/Average salary for every year of paid contributions)*Pensions value (arbitrary value, indexed by average salary growth)	Pension benefit= sum of paid in, indexed contributions/ further life expectancy at the moment of retirement	Pension benefit=Individual coefficient*average social insurance income for past 12 months prior to retirement*1.1*the proportional part of the percentage for the months of service
	Maximum pension	Maximum pension is 2.3 times the average pension granted to a pensioner with lifelong average salary	Not specified, the limit is set by maximum contribution base, which is 2.5 times the average salary	The maximum pension is equal to 35% of the maximum social insurance income; app. 465 € in 2015
	Minimum pension	YES / 275 €	YES/ 201 €	YES / 68.4 €
	Average old age pension in 2014	410 €	459 €	158.5 €
Minimum period of paid contributions in years		15 (29 years for eligibility of minimum pension)	20 for woman, 25 for man (for eligibility for minimum pension)	15
Indexation of pensions		Inflation based	Inflation + at least 20% of real wage growth	50% inflation + 50% average salary growth (social insurance income)
Specific groups with separate PAYG pension systems		Soldiers, Policemen, Firefighters, Prison guards	Soldiers, Policemen and other security forces; farmers, judges, prosecutors, miners	Military personnel, Ministry of Interior officers, investigators, national security officers, firefighters and related professions; ballet dancers
Basic contribution rate		18%	19.52%	17.80%
Contribution base		Gross salary	Gross salary	Gross salary (there is minimum threshold which can be higher than the gross salary)
Taxation of pensions		NO	18% PIT (first 60€ nontaxable), 9% health insurance, of which 7.75% is tax deductible (effectively 17% at average pension)	NO

Measures adopted
A consolidation which is not a consolidation
A funded pillar was introduced in all three countries ten or more years ago. Nevertheless, it still needs to be considered a novelty, which has not yet been adopted by political class as a true part of the pension's policy. Many see the funded pillar as a villain redirecting the flow of social contributions from the government PAYG to the pockets of pensioners. Therefore it was not surprising that decrease of the size of the funded pillar, measured by the percentage of gross salary used to finance it, was among the first on the list of the proposed measures to tackle the deficit of public pensions.

Table 2: Basic parameters of funded pillar

Funded pillar	Slovakia	Poland	Bulgaria
Contribution rate	Cut from 9% to 4% in 2012, the rate should gradually increase to 6% in 2024	Cut from 7.3% to 2.3% in 2011, the rate should gradually increase to 3.5%, currently 2.92%	5%
Entry to the system	Changed from opt-out to opt-in in 2012	Opt in	Opt - out
Taxation of pension from the funded pillar	No	Yes	No

Slovakia
Political support for the funded pillar significantly decreased after the crisis in Slovakia. If the public deficit is 5% of GDP and the funded pillar redirects 1.2% of GDP, it is much easier to "consolidate now" via diminishing the pillar, despite the increase of implicit debt of PAYG. There is no political interest to return the contribution rate back to 9% in Slovakia, as expenditure consolidation became very painful for both the right and the left part of the political spectrum. Although the funded pillar did not encounter such detrimental changes (as e.g. in Hungary), the current setup is very unfavorable. The entry to the funded pillar was changed from opt-out to opt-in scheme, which resulted in entry level as low as 10% of potential savers. Furthermore, the government "opened" the funded pillar for the 4th time to allow the pensioners to "return" their savings to public schemes at no costs and to acquire same pensions rights as if they had never been in the funded pillar. This measure decreased the value of savings by 900 mil. Euro, representing approximately 14% of the total value of savings.

Bulgaria
The "Pandora Box" with regard to private pension savings was opened in 2010 when the accumulated savings with professional pension funds for 1st and 2nd category of workers (working under specific conditions) were transferred to the state PAYG system. The transfer was made with the help of changes made to the Social Insurance Code. The argument used to justify the transfer was that the accumulated funds of 100 mil. Leva (some 51 mil. Euro)

were insufficient to allow for the payment of supplementary pensions from 2011 onward, as foreseen in the law[2]. The seizure of private pension savings in professional schemes was declared unconstitutional by the Constitutional Court in 2011, but the seized funds were never recovered by the state social security fund.

The Pandora Box was opened once again in late 2014. Following the changes to the Social Insurance Code in late 2014 and early 2015, workers were given the possibility to opt out of the second pillar and rely entirely on the state PAYG system for their future retirement income. If one opts out of the second pillar, his/her savings with private pension funds (accumulated until the date of transfer) would be transferred to a special fiscal reserve fund[3], and all his/her future pension contributions would be directed solely and entirely to the state social insurance fund. It is worth noting that the legal changes also allow for unlimited movement from the first to the second pillar and vice versa. In case of return to the second pillar, one would have his/her former pension savings transferred, but all the contributions paid in the meantime, as well as the potential return on pension savings, would be lost.

Poland

The global financial crisis exposed the underlying weakness of Polish public finances, pushing headline general government deficit in 2010 up to nearly 8% of GDP[4]. With the government reluctant to do structural reforms, the capital pillar was vilified; in particular the buying of government bonds by OFE was ridiculed ("government must borrow money from OFE in order to make transfers to them"), without reflecting on benefits of the capital pillar (vibrant capital markets, diversification of risks in the pension pillar) or on the other sources of deficit.

The marginalization of the capital pillar has been executed in two stages. In the first stage enacted in 2011, the contribution going to the capital pillar was cut from 7.3% to 2.3% of gross wage (with a pledge to increase it later up to 3.5%). Such diversion of funds was worth around 1.1% of GDP, reducing the current deficit of general government, but also slowing down accumulation of funds in OFE and increasing liabilities of ZUS.

In the second stage enacted 3 years later, the government:
• Took over half of the assets of OFE (the part they kept in government bonds), worth at that time 8.9% of GDP, adding the same amount to notional accounts in ZUS.
• Made the second pillar voluntary (requiring opt in; default option means PAYG only). Although 2.5 million people declared they will stay in OFE (around 15% of people insured), the percentage is much lower among people entering the labor force now, indicating that the future of the OFE is uncertain. This move reduced the inflow of funds to OFE by around 0.4% GDP annually.
• Made ZUS responsible for paying out pensions from both ZUS and OFE and used it as a pretext to gradually take over all pension assets of people approaching the retirement age[5].

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[2] On the other hand, the accumulated funds were insufficient, as the planned gradual transfer of pension contributions from the first to the second pillar was suspended a few years earlier, in the first place.
[3] the so-called Silver Fund, established to support financially the state PAYG system
[4] Tax cuts adopted in 2007 unaccompanied by similar expenditure cuts were, besides the fallout from the crisis, had been also an important factor behind the growing deficit.
[5] This last change was possible because the previous 10 years mechanism to payout pensions from the PAYG pillar had not been decided.

According to the scheme during the 10 year period before retirement OFE are required to transfer all the assets of the insured in 120 equal tranches to ZUS. Such a move further undermines OFE and amounts to 0.3%–0.4% of GDP annually[6].

Overall the changes reduced the public debt and deficit at the cost of increased pension liabilities of ZUS, but it was not a zero sum game. In order for the changes to remain neutral from the perspective of public finances the reduction of explicit debt should be matched by the same increase in implicit debt with other factors held constant. Unfortunately that was not the case, fiscal space created by the marginalization of the second pillar had been only partially used to reduce explicit debt; it also allowed for increased spending in the election period 2014-2015. This can be seen by comparing fiscal forecasts from the Strategy of public debt management from 2012 (when changes in the capital pillar were not taken into account by the government) and 2013 (prepared after the changes were announced). After adjusting the 2013 strategy for the impact of changes in the capital pillar it can be shown that other expenditures for 2014 and 2015 were by 1.1% and 1.8% GDP higher than in the previous strategy.

Retirement age will never fall

Lowering the pension benefits is a nightmare for any politician. It is not surprising, that reductions or changes in other parameters of PAYG are the first choice measures. Increasing retirement age is easy to support by the argument of increasing life expectancy. Nevertheless, political context significantly influences the form and size of the increase.

Slovakia

The pension reform adopted in 2003 sets the retirement age to 62 years. Within the next 12 years, the life expectancy of the 62 year old had increased by almost 2 years. Longevity became a reason for sharp expenditures increase of PAYG already before the demographic shift. But the current government evaluated eventual loss of political support as too high, and opted not only for delayed shift in retirement age (starting in next election cycle), but also for very slow increase – approximately 1.5–2 months per year.

Bulgaria

The retirement age has been on a stop-and-go rise ever since the 2000 reform plan was launched. Between 2000 and 2009 the retirement age for the mass 3-rd category of workers was gradually raised from 60.5 to 63 years for males, and from 55.6 to 60 years for females with the pace of increase being 6 months per year. In 2010 and 2011, the gradual increase was frozen, but in 2012 it was resumed at a slower pace of 4 months per year. This new plan for increase of the retirement age lasted just 2 years and was "frozen" in 2014 on populist grounds.

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[6] Under the earlier ESA95 rules, such transactions reduced the general government deficit; under the new ESA2010 methodology such a move is treated as fiscally neutral, when the current transfer of assets is accompanied by an increase in the future liabilities.

After changes to the Social Insurance Code, adopted in late 2014 and early 2015, the increase of the retirement age will start rising again from 2016 onward. For females, the retirement age is to rise by 2 months per year till 2029 and by 3 months thereafter until it reaches 65. For males, in turn, the retirement age is to rise by 2 months per year till 2017 and by 1 month thereafter until it also reaches 65. A gradual increase is also foreseen for 1st and 2nd category workers, too, but their retirement age will remain lower than the one for the 3rd category of workers.

Poland

Increase of the retirement age was planned already in 1999, but its implementation was delayed until 2013. Unfortunately the populist government elected in 2015 declares that it will return to the previous retirement age (60 for women and 65 for men). Due to the pension calculation formula (accumulated contributions divided by life expectancy) such a change per se would not be detrimental to the pension system, as a lower retirement age would translate into lower pensions. Besides macroeconomic consequences of such a move (smaller work force, lower tax revenues, worse time profile of ZUS revenue and expenditure) one should take into account the political risks. Creating a huge number of pensioners with very low pensions (particularly women because of their lower retirement age) would generate increasing pressure from pensioners to change the pension formula either through more generous indexation or even through switching back from a defined contribution to a defined benefit. All such changes would be at the expense of the working population.

Get more contributions

Any deficit has only three possible solutions. Lowering expenditures, increasing revenues and a combination of both. As it was mentioned before, immediate lowering of expenditures is the last on the list of politicians. Except for diminishing the funded pillar, there is a wide variety of measures to improve the revenues side of PAYG system.

Slovakia

All the adopted measures focused on enlarging the contribution base, the contribution rates remained unchanged. First of all, the ceiling for calculation of contributions was increased from 4 to 5-times average gross salary. Second, the calculation of base for self-employed changed, forcing them to pay at least the same amount as a person with minimum wage has to pay (including employer's contribution). Third, Slovak labor market regulation recognizes specific, very flexible short-term contract (less regulated than part time contract), which was subject of only personal income tax. It became widely popular across the country right after the crisis. Contribution-free regime was abolished, with only students allowed to earn up to 166 euro monthly without paying contributions. These measures added app. 0.5% GDP to the PAYG system.

Bulgaria

The pension contribution rate for the mass 3rd category of workers was 32% in 2000. Yet, between the beginning of 2001 and October 2007 the contribution paid to the state PAYG system decreased by 10 pp, with 5 pp of these gradually redirected to the second (capital) pillar of the pension system. Effective as of the beginning of 2010, the contribution rate to the PAYG pillar declined by further 2 pp, but this step was quickly reversed, so that a 1.8 pp increase of the contribution followed the following year.

Currently, the pension contribution rate for the mass 3rd category of workers is 17.8%, with 5pp of these being transferred to the capital pillar for those born after start-1960. For older workers the entire pension contribution of 17.8% is paid to the PAYG pillar.

Yet, the widening deficit of the PAYG system urged the government to set its eyes on the contribution rates in late 2014 and early 2015. Under the legislative changes passed in early 2015, the contribution rate to the PAYG system will be increased by a total of 2pp in 2017-2018.

Poland

In Poland there are certain possibilities to increase the revenue side of the pension system, but most of them come with serious drawbacks. Looking narrowly only at people already enrolled in ZUS the first option would be to eliminate the cap on the amount of contribution paid by high earners; in the short run it would increase the revenues of the system, but in the longer run it would also mean higher pension expenditures (as long as the pension calculation formula would remain unchanged). The second option would be to increase the contributions of entrepreneurs who at the moment can pay lump sum contributions (around 250 euro monthly), not related to their income; for startups and microenterprises such lump sum is high, for more established, affluent business people it is much lower than for employees with similar earnings. The drawback of aligning contributions with income for small business is an increase in administrative costs and incentives to artificially boost costs in order to reduce profits. Third option is to close loopholes that allow for some types of contracts (civil law contracts) to remain excluded from social contributions. Although this option is the least controversial, the problem is that it could seriously increase the tax wedge for the least skilled and productive workers (many of whom work on such contracts) thus pushing them into the shadow economy or inactivity. The most desirable way to increase social contributions would be adopting a broader view and including farmers who are currently in a separate pension scheme. Although police, military personnel and judges are also excluded from the general social security system, including them would not increase revenue of the public sector. As they are public sector employees, the majority of costs of contributions would fall on the employer and ultimately the taxpayer.

Lower indexation

Except for increasing the retirement age, another way to decrease future pension expenditures is to change the indexation rule of future pensions.

Slovakia

Before the crisis, the indexation rules combined the nominal growth of wages and inflation rate, both weighted equally by 50% (so called Swiss indexation). This rule had been gradually changed to exclusively inflation indexation (based on pensioner's basket, not regular CPI). This single measure is supposed to have the highest impact on future expenditures, as the growth of average wage is expected to be permanently higher than inflation. If we suppose permanent 3% wage growth, and 2% inflation for the following 15 years after issuing the pension benefit, the "price" indexation would result to 8% lower pension than that using the previous method of indexation.

Bulgaria

The formula for indexation of pensions has undergone frequent changes since 2000. Since 2007, the indexation is carried out according to the so-called Swiss rule – by the nominal growth of wages (more precisely, the average social security income) and inflation for the previous calendar year, both weighted by 50%. After 2007 the indexation takes effect from July 1 each year. As part of the budget consolidation efforts after the 2009 crisis, the indexation of pensions was shelved in the 2010-2012 period. Yet, as of beginning of April 2013, the pensions were indexed arbitrarily, with the rate of indexation depending on the year of retirement and varying between 2.2% and 9.8%. This put a serious strain on the budget and in fact was one of the reasons for the renewed widening of the budget deficit in 2013. Effective mid-2014 pensions, the Swiss rule was reinstated and pensions were indexed according to it.

Overall, although the so-called Swiss rule has been in effect since 2007, the specific rate of indexation is often held hostage to successive governments and their budgetary stance.

Poland

In Poland it is important to distinguish between the indexation of notional accounts in ZUS and indexation of the already granted pensions from the previous defined benefit system. Notional accounts are indexed by the growth of revenues of ZUS, so the revenues and liabilities of ZUS are connected. Unfortunately the initial design of the reform has been changed and a floor was introduced in the early nineties, banning negative indexation of accounts. In case of a serious recession and protracted growth slowdown such a setting can result in a large fiscal risk. As stated by the IMF "…each of the shock scenarios would activate zero-floor indexation limit in the main account, with adverse fiscal consequences compared to a scenario allowing negative indexation. In the projections, this impact would range from 3 percent to 25 percent of GDP."[7]

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[7] See IMF selected issues 2014: https://www.imf.org/external/pubs/ft/scr/2014/cr14174.pdf

The already granted pensions from the previous defined benefit system are indexed by the rate of inflation and at least 20% of wage growth. Such a formula is also a diversion from the original outlay of the reform, which assumed only cost indexation. Furthermore, after the global financial crisis the government also manipulated the indexation rules introducing a lump sum valorization (beneficial for people with low pensions at the expense of people with higher pensions). Such changes are dangerous, as they increase the risk of future political meddling with the indexation rules, especially coupled with lower retirement age and increasing number of people (potential voters) receiving low pensions.

Other measures
Bulgaria
One of the significant drains on Bulgaria's PAYG system is the possibility for early retirement with the help of so-called disability pensions. This type of pensions has grown several times in number in the past few years and in 2014, 1/3 of the new pensions were disability pensions. Their mass usage, including the bribery of medical expert committees, who issue disability assessments, has led to an extremely low effective age of retirement – 57.6 years in 2014. The reason for this rather low effective pension age is precisely disability pensions, as the average pension age for disability pensions is 52.5 years. Governments are aware of this problem but have done little to close the loopholes and tighten control over medical expertise.

Poland
Disability pensions in Poland remain unreformed. One of the outcomes of old age pension reform is the ongoing fall in the replacement rates. Without changes in disability pensions the relative attractiveness of disability pensions versus old age pensions increases, creating a risk of abuses in the area of disability pensions.

PART II
Deficit, a twin of pension

The welfare state is extremely complicated to understand for regular voter, and its financing is unclear to most voters. Politicians respond to this situation by implicit debts that allow them to win in the short term by postponing the costs to the future. This can be illustrated either on some current variables or changes in determining parameters of balance of pension system in future.

Size of the deficit
Social welfare state, notably the pension system, is financed in most EU countries through contributions derived mostly from labor income – wages. In some countries there are two kinds of contributions known as employee and employers contributions. Nevertheless the

working mass is mostly interested in net cash. Voters know that they are taxed, but usually they are not aware of the rate they have to regularly contribute to the pensions system. Lacking transparency of financing of the pension system is underlined by the existence of the above mentioned employer contributions, which serve as a "dirty glass". Employer cannot be insured in a PAYG system and these contributions are mere wage costs, just transferred to another account, but voters are mostly not aware of them or they don't understand that it decreases their net labor income[8]. Furthermore the nature of PAYG confuses many contributors, a fact that can be illustrated by a typical question of a fresh pensioner unsatisfied with his pension: "Where did all my contributions go?"

The combination of postponed expenditures and low transparency of financing creates an environment where promises exceed availability of resources. As a result the typical feature of pensions system is either current deficit, or uncovered implicit debt. The following table illustrates the size of the deficit of PAYG (1st pillar, not including the transfer redirected to 2nd pillar) in different comparisons:

Table 3: Deficit of PAYG system

PAYG (1st pillar) in Y 2014	Slovakia	Bulgaria	Poland
Pension deficit in bln. euro	1.9	2.265	8.1[*]
Old age pension expenditures in bln. euro	5.3	4.2	28.9
Pension deficit as a share of pensions expenditures	35.7%	54.3%	28.1%
Pension deficit as a share of GDP	2.5%	5.3%	2%
Pension deficit as a share of taxes and contributions	8.9%	19.2%	6.2%

*Only the general pension system, without occupational pension schemes. In 2014 pension contributions amounted to 18.8 bln PLN; further 2 bln PLN of pension contributions were invested in the capital pillar. Calculation of the deficit does not take into account the changes in the capital pillar amounting to 2.6 billion euro (part of assets of pension funds taken over by government in 2014 was transferred directly to PAYG).

Analysis of the PAYG deficit naturally requires evaluation of future development. This can be illustrated by the data from the last projection of the European Commission, issued in spring 2015. Due to the fact that the Commission´s calculation uses a little bit different methodology (e.g. disability pensions are included), there are some discrepancies, which are partly explained in the commentaries below.

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[8] The fact, that the contributions burden is shifted on workers' salaries is well documented in this meta-analysis:
http://www.voxeu.org/article/who-really-pays-social-security-contributions-and-labour-taxes

Table 4: AWG projection of public pension systems

Baseline scenario as % of GDP	2013	2020	2030	2040	2050	2060
Slovakia						
Public pensions, earnings related	8.0	7.9	7.5	7.9	8.9	10.0
Public pensions, contributions	6.2	5.9	5.8	6.0	6.2	6.3
Deficit	−1.8	−2.0	−1.7	−1.9	−2.7	−3.7
Bulgaria						
Public pensions, earnings related	9.5	8.1	7.8	8.1	8.8	9.1
Public pensions, contributions	7.3	7.0	7.0	7.0	7.1	7.2
Deficit	−2.2	−1.1	−0.8	−1.1	−1.7	−1.9
Poland						
Public pensions, earnings related	10.4	10.0	9.9	9.5	10.1	10.5
Public pensions, contributions	6.8	7.3	7.5	7.7	7.7	7.6
Deficit	−3.6	−2.7	−2.4	−1.8	−2.4	−2.9

Source: EC-EPC (AWG) 2015 projections

Slovakia

Current old age pensions deficit equals to more than a third of the pension's expenditures. We should note that this number does not include the resources that the government has to use to finance the drop in revenues due to the existence of the 2nd pillar. The deficit itself would bring government's finances to the limit set by the Maastricht criteria, but in reality, the government does not have to cover the whole deficit from tax revenues. A 1.4 bln. Euro share of deficit is cleared from other parts of social insurance system by using all the resources of the Special reserve fund and surpluses from the sickness fund, unemployment fund, injury fund and fund for disability pensions (data specified in following part). For these reasons, financing of the deficit from government tax revenues reached 0.5 bln. Euro. However, this relatively small amount should be attributed to the marginalization of the second pillar, which resulted to higher revenues of the PAYG. Should the effective rate of the funded pillar remain at 9%, the tax subsidy would reach as much as 1 bln. Euro. The projection of deficit by the European Commission is highly influenced by expectation of convergence of the economy and its relatively high economic growth. The nominal wage, which is a key factor for the growth of contributions, is expected to grow by more than 5% during the whole next decade. Such expectation means higher revenues in early periods of projection but it will translate into higher pension expenditures in its later part. The deficit will drop to less than 2% in 2030, but later it will accelerate to 4% in 2060. This development is also influenced by the number of employed people, the agents responsible for paying contributions. While the projection declares its relative stagnation up to 2040, afterwards almost 22% decline in number of employed is expected in period 2040-2060 (more in section Support ratio). The drop in contribution revenues relative to GDP in 2020 compared to 2013 is mainly influenced by expected growing contributions to 2nd pillar.

Bulgaria

The deficit of the PAYG pillar was about 54% in 2014, meaning that more than half of the pension expenditures is not financed by pension contributions[9] but by transfers from the state budget to the PAYG system. This is expected to increase further to about 58.5% in 2015, illustrating clearly the financial unsustainability of the PAYG pillar. In GDP terms, pension payments already approach 10% of GDP, while the deficit of the PAYG system is effectively more than 5% of GDP. Its funding swallows about 19% of tax revenues per year. A few years ago, the state has entered the PAYG system as a "third insurer", in addition to employees and employers, and has started paying a 12% pension contribution to the PAYG system for all current employees. Yet, this 12% "contribution" is effectively just another form of a transfer from the state budget (i.e. taxes) to the state social insurance fund. In accounting terms, this 12% contribution of the state helps reduce the pension system deficit by half to some 2.5% of GDP. Yet, if this de-facto transfer is added to the other transfers from the central government to the PAYG system, then the actual deficit becomes more than 5%. In contrast to other countries in the region, the PAYG system's deficit in Bulgaria is financed entirely by state budget transfers.

Recently passed changes to the Social Insurance Code foresee a total 2pp increase of pension contributions to the 1st pillar in 2017-2018. This, together with a slow increase of the retirement age over the next two decades will help slightly reduce the deficit in the medium run. Yet, the Parliament has also passed changes to the pension benefit formula that gradually raise pension benefits and hence pension expenditure, over the long term. As a result, the deficit of the PAYG system will eventually be higher in the long run (by 2037 – the last year of the reform plan) than the one projected before the latest reform package was adopted. In other words, the reform package of 2015 in fact pushes the PAYG system to an even more unsustainable path than the one followed before its adoption.

Poland

Despite current deficit, the PAYG part of general pension system is sound, thanks to 1999 reform which introduced the formula that ties future pensions with the contributions paid. The currently observed deficit in the old age part of the pension system is the legacy of previously granted relatively high pensions and also generous conversion of contributions made before 1999 into sums on individual notional accounts created in 1999. Using detailed model of pension system created by Instytut Badań Strukturalnych (IBS) one can show, that the old age pension part of it should be balanced after 2030 in case of optimistic GDP growth scenario (Polish Ministry of Finance forecasts) or around 2040 in case of more caution growth scenario published by the European Commission. One should however remember that the general pension system, besides the old age pensions (7% GDP expenditures in 2014), pays also the other pensions (disability, survivors), which amount to

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[9] The deficit of the PAYG system takes into account only social security contributions to the PAYG system, i.e. it does not include the extra 5pp contribution to the second pillar for those born after 1960.

2.6% (2014), some of which should be included into the old age pensions according to the Ageing Report methodology[10]. Furthermore, there are also special pension schemes for farmers (0.9% GDP expenditures in 2014 and less than 0.1% GDP in contributions!) and military and police (0.9% GDP expenditures, servicemen do not pay any contributions). Although the deficits in those parts of the pension system are smaller at the moment, they remind largely unreformed and therefore the deficits there are not going to disappear.

Real costs per worker

Although the pension reform or adjustments had been adopted in many European countries in the aftermath of the crisis, it does not mean that the true financial position of the current and future pension system was translated into adequate financing, or changes of parameters defining future costs. The subsidy of the PAYG is present in many governments' budgets. In this part, we will try to calculate what are the real costs of old-age pensions related to workers' salaries. In this calculation, the transfer to the 2ndpillar is considered as a revenue of PAYG, in other words, the value we search for does not cover current costs of these transfers (due to the fact that there are no savings on PAYG expenditures at the moment). Such number illustrates the true costs of pensions system:

Table 5: Real costs of old age pensions per worker (% of gross salary)

Y2014	Slovakia	Bulgaria	Poland
Official contribution rate	18%	17.8% / 12.8%	19.52%
Real costs per worker	28.30%	41.27%	27.18%

Slovakia

The calculation of the real costs per worker (current effective contribution rate) is based on the data of the Solidarity reserve fund (4.75% contribution). There are no significant exemptions from contributing to this fund, therefore it represents sort of benchmark, or a tool how to convert amount paid in to contribution rate. The deficit was defined as the sum of all transfers to the old age fund, other than revenues from official 18% contribution. The deficit of 1.9 bln. Euro is then compared to the revenues of the Solidarity reserve fund – as it is 2.17 times higher, the necessary contribution to cover the deficit would be $2.17^*4.75\%$ =10.3%.

Nevertheless, it does not mean that the contributions need to be raised by 10.3%. Three quarters of this increase are already financed through the social security system, which transfers surpluses of other funds plus the Solidarity reserve fund into the Old age fund. Therefore it would be needed to increase the total contributions rate (with an impact on wage bill, resp. net cash earned) by another 2.5%.

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[10] It should be noted that the separation between old age and disability pensions in Poland differs from the Ageing Report methodology. 2.7% GDP expenditures from disability fund can be roughly divided into 1.1% GDP of disability and survivors benefits, 1.5% GDP of benefits paid from disability fund, but under AR methodology considered old age pension and 0,1% GDP of further minor differences.

An obvious question would be why the government does not adopt this change which would significantly add to the transparency. Actually, the legislation does not allow the transfer of surpluses among funds, therefore the Parliament must regularly approve an exemption so uncovering the truth would save also the costs of this regular exercise in the Parliament. Nevertheless, there is one fiscal reason behind. The calculation of PAYG pension for the pensioner who is also contributing to the 2nd pillar is based on the assumption that he is transferring 4/18 share of his contributions. In other words, his PAYG pension would be currently 78% (4/18=22% share is redirected to the 2nd pillar) of the pension received by someone who never took part in the 2nd pillar. Hence, applying the effective contribution rate would decrease this "discount" from 22% to 14.3%. Naturally, this would increase future PAYG expenditures and furthermore deepen the deficit of PAYG. From this point of view, the government has "good" reasons to prefer tax subsidy to increase in contributions.[11]

Another reason for sustaining tax subsidy is the negative effect of increasing labor costs. Although a 2.5% increase at existing 36% contributions leverage would not be detrimental and would probably lead to collection of the desired sum, it would be against the recommendations of majority of institutions, who advice to look for ways how to shift the burden from labor to indirect taxation.

Bulgaria

As more than 50% of pension payments are currently financed from taxes (other than social security contributions), the deficit in the PAYG system, clearly, cannot be removed by measures solely on the revenue side. Theoretically, if only social security contributions are to bear the burden of balancing the system, that would mean a raise of these to above 40%. Such a high rate on top of income taxes and other social security contributions (e.g. health, unemployment, second pillar of pension insurance, etc.) is no doubt a huge incentive for tax evasion. In other words, raising the pension contribution to above 40% is likely to lead to even lower revenues from contributions than the ones collected currently.

A more realistic approach for reform would focus also on measures to reduce pressure on the expenditure side, for instance by raising the retirement age at a steeper step and strengthening the control of the allocation of the so-called disability pensions that help tens of thousands retire earlier than at the official age each year. Given the negative demographic trends, the sustainability of the PAYG system would remain an issue in the long run, regardless of the corrective measures taken. Hence, an in-depth reform plan would seek to gradually replace the effectively bankrupt PAYG pillar with a dominant capital funded system. This would mean a gradual increase of contributions to the second pillar at the expense of reducing contributions to the first pillar, with the temporary transition cost being paid from privatization and concession revenues, as well as tax revenues. New entrants to the labor market can enter solely the capital pillar, i.e. pay their entire pension contribution to the second pillar. Such a transition appears to be the only viable scenario for putting the pension system on sustainable grounds in the long term.

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[11] As a matter of fact a group of members of Parliament already questioned the Constitutional court to rule out whether this improper discounting of PAYG pensions is in line with the constitution or not, no answer yet

Poland

Deficit of general old age pension system in Poland (ZUS) is a legacy of the past and not built-in trait of it, so talking about required effective contribution rate would be misleading. Current deficit should be regarded as paying down old debts and indeed – lately fall in implicit liabilities of pension system could be observed. This statement however does not take into account the latest changes (marginalization of capital pillar) and proposed decrease of pension age. So one can think about the costs of the general pension system as 19.52% of gross salary that is recorded on notional account in ZUS/paid into funded OFE and additional 7.65% of tax used to pay down the more generous, pre-reform pensions. On top of this we could add the costs of pensions for the privileged – farmers, police and military officers, judges and so on, amounting to additional 6.2%. So the workers enrolled in the general pension scheme should pay 27.18% of their wages to cover the costs of the general system and 33.4% if one includes the costs of the occupational pension schemes as well (in the occupational pension schemes the contributions are so negligible, that one can assume that all costs of them are borne by the "average" taxpayer enrolled in the general pension scheme). Such calculations should be regarded as conservative, as for the reason of simplicity they do not take into account the disability pensions, which are partially, in reality, old age pensions and are also not fully covered by the contributions paid into the disability fund.

Support ratio

The ratio of contributors and pensioners is crucial for the sustainability of the PAYG system, unless its expenditures are automatically adjusted to the sum of paid contributions. Pension systems in CEE countries do not have this sort of automatic stabilizer, or in a limited form. Therefore, the support ratio is a very illustrative variable indicating not only the demographic shift, but also the size of the risk of unsustainability of the PAYG system. With the exception of the Czech Republic (141), the values of Support ratio in countries of CEE vary in the range 81-120 per 100 pensioners. These countries are facing the biggest risks and costs of aging, as the process will be faster when compared to the developed countries of the EU. It should be attributed to the change of the regime, the transition to market economies significantly decreased the economic safety of families and so the fertility of women.

Table 6: Support ratio (Number of contributors per 100 pensioners, Public pensions)

Country	2013	2020	2030	2040	2050	2060
Bulgaria	124.3	129.2	127.0	120.6	108.3	105.5
Poland	173.4	171.5	157.3	150.4	126.9	110.6
Slovakia	175.0	156.8	138.4	123.7	106.5	98.2

Source: EC-EPC (AWG) 2015 projections

Support ratio equal to 100 in the PAYG system means, that one contributor should be able to pay for a pension of one pensioner. We can put it more simply, if the contributions rate

is 25% of average salary, then average pension will be 25% of the average salary (decreased by the administrative costs). The support ratio might not be a problem, if the replacement, or benefit ratio is low. But the value of benefit ratio around 40- 45 as it is common in many countries, is difficult to sustain. With much higher support ratio today the existing tax wedge is considered to be a burden and barrier to creation of new jobs. It is hard to imagine that a working person, responsible for feeding the kids and paying mortgage would be able to finance such pension. Therefore the reduction of pensions, hence lower benefit ratio is a very probable outcome.

Slovakia

One of the highest drops in the value of support ratio is predicted to happen in Slovakia. As we have mentioned above, the problem "happened" during the transition period from communism to market economy, when fertility rate fell below fatal 1.25. On the contrary, during the 70s and 80s, the average fertility rate was well above 2. As a result, there are several strong cohorts, who will retire from the labor market in period 2035-2045, but the following generations will be half the size. This is also a reason, why the deficit growth of PAYG occurs after 2040. A simple illustration of the support ratio of 100 should also sound alarming. If the effective rate 28.3% was adopted to legislation and should persist till 2060, then it would not be sufficient to pay even for so called Minimum pension, which was added to law on pensions this year and equals to about 32% of average salary.[12]

Bulgaria

Bulgaria's support ratio is set to improve slightly over the next 10-15 years, but worsen thereafter. By 2060, the EC forecasts that the support ratio is to decline to 105.5, meaning that roughly, 100 persons in formal employment would be expected to support financially (i.e. with their contributions and taxes) 106 pensioners. Even if the worsening is not as acute as in other CEE countries, it would most surely translate in a lower replacement ratio for pensioners' income. Currently, Bulgaria has a relatively low gross replacement ratio of some 34%, according to the EC's calculations (i.e. pension benefits, on average, are equal to 34% of gross average wages). Yet, one needs to take into account that wage statistics for Bulgaria is not quite reliable due to underreporting of wages for tax evasion reasons. Hence, wage statistics carry a downward bias and it is quite likely that the current replacement ratio is much smaller.

Poland

The expected drop in the support ratio in Poland was one of the main reasons behind the reform of 1999. The pension calculation formula works in such way that lowering the support ratio affects the replacement ratio and not the pension system deficit. Unfortunately currently one can observe growing pressure to undo the reforms – to lower retirement age, which, without other changes in the system, would lower pensions significantly thus creating pressure to switch back to defined benefit formula instead of defined contribution. Obviously such changes would come at the cost of higher taxes or debt growth negatively affecting working age population.

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[12] The total nominal benefit ratio will be a little bit higher, as it does not include the pensions from funded pillar and it could reach as much as 37.

Part III

In the first part, we have discussed the descriptive parameters of the PAYG systems. In the second part we have analyzed real values of parameters that describe the sustainability of the PAYG system. In the following part, we discuss proposals that could either improve the sustainability of the PAYG, or increase the sustainability of the pension system as a whole.

Slovakia

The reform of the PAYG system adopted by Slovak government in 2012 had been adopted in a politically cautious way, so that the impact of reform on size of pensions would be spread over several decades. As a result, the PAYG will still generate substantial deficits and even at the end of the projection period it will reach more than 4% of GDP. We try to simulate in the model the effect of change in two parameters which can improve the overall balance.

Retirement age
In several countries, the retirement age has been increased in substantial increments, while in Slovakia the retirement age had been left unchanged until 2017. We try to simulate[13] the effect of a faster increase, which will add 6 months on annual basis from 2016, so that it would reach 64 years in 2019. This increase in retirement age corresponds with the increased life expectancy of a 62 years old person, which changed for men from 15 in 2003 when current system was introduced to 17 in 2015 (19 to 21 for women). After 2019, the retirement age will be adjusted with the same formula as stipulated in the law today.

The assumptions in this model are the following:
• Deficit is calculated as a difference of expenditures of the old age pensions and revenues which correspond to 22.75% contributions (old age fund + solidarity reserve fund)
• The expenditures of the old age pensions fund do not include survivors' pensions, due to the limits of the existing model. The survivors' pension would increase the deficit by another 0.6–0.8% of GDP, but this effect could be eliminated if we add to revenues permanent surpluses of other funds (see Part II – real costs per worker)

Figure 1: Effect of changes in retirement age

Deficit of PAYG system in % of GDP

Baseline deficit — Retirement age increased

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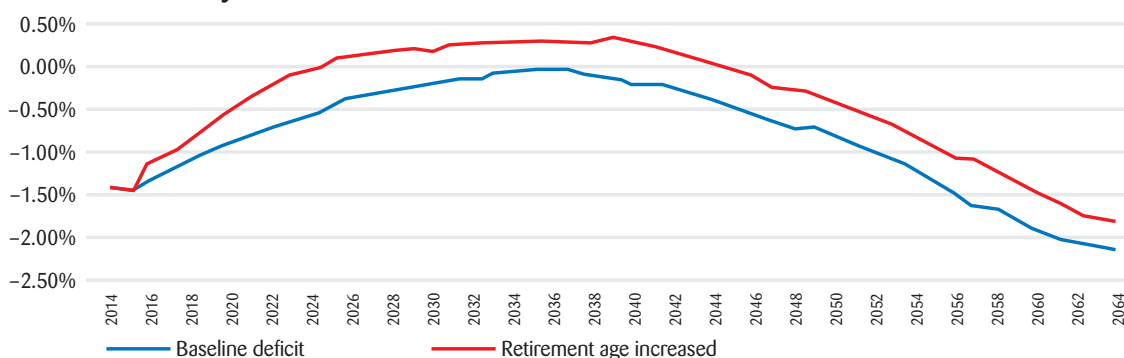
[13] The data were provided by the Secretariat of the Council for Budget Responsibility. The model is based on the same macro and demographic assumptions as used by the projection of European Commission.

The chart clearly indicates the effect of faster increase in retirement age on the balance of PAYG. The old age pensions balance would be positive in the period 2025-2044 and the surpluses could create a buffer for future deficit increase. The effect of demographic shift later on is expected to be so strong that the deficit again drops to 2% of GDP. Increasing retirement age would lead to higher employment, culminating in 2046, when additional 86 thousand jobs would be needed (4.5% more than projected by AWG).

Indexation

The only parameter in the pension's formula that had not been adjusted is the Pension's value (see Table 1). This variable is indexed by the annual nominal growth of the average salary and so it should reflect the overall increase in productivity of the economy. Nevertheless, if the baseline value of the variable was set too high, the pensions formula results in too high pensions expenditures. Furthermore, the average salary may grow despite the decrease in the total amount of contributions. Naturally, we should suggest an automatic balance mechanism that would increase future pension's rights only in case of total contributions increase. That would represent significant adjustment of the current model. Therefore we test the effect of 10% discount on average salary growth – pension's value will be indexed by 90% of nominal wage growth.

Figure 2: Effect of lower indexation of pension's value

Deficit of PAYG system in % of GDP

Baseline deficit | Indexation of pension's value by 90% | Cumulative effect of both measures
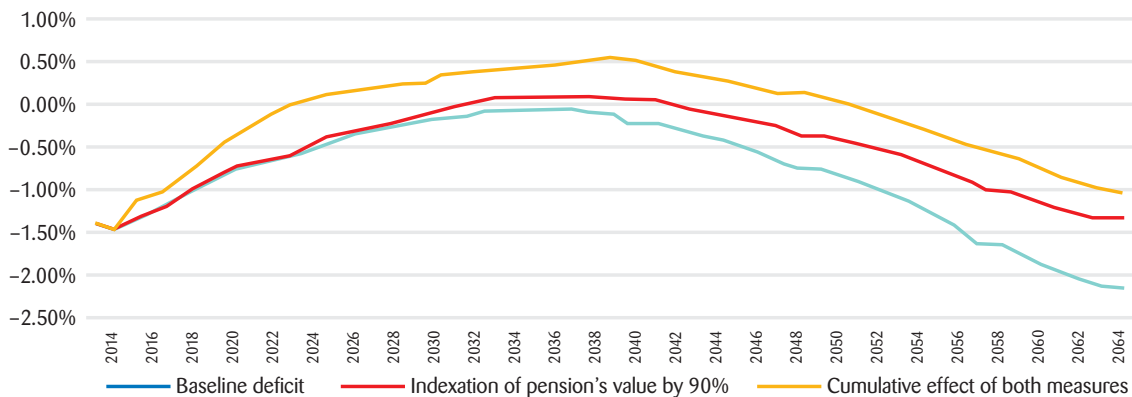
This chart indicates the substantial effect of pension's value indexation on the total deficit of PAYG, which is spread differently across the period. It does not create immediate effects like the shift in the retirement age (smaller and shorter surplus period), but its "fruits" will be collected at the end of the period, when the drop in deficit is more significant. It is the cumulative effect of this measure which permanently decreases the pension's value. As an example, in 2055, the pension for worker with average salary for 40 years would be 15% lower compared to current settings. The effect of this measure would be permanent and therefore the question of adequacy of pension may arise. Nevertheless, at the end of simulated period, the replacement ratio would still stay above 40% for a worker not participating in the 2nd pillar.

We have also added a line for the cumulative effect of these two proposals. As it is not easy to estimate the dual effect of higher GDP (due to higher employment at the labor market) and growth of nominal wage, we have simply added the effects of these two adjustments. It would prolong the surplus period to 27 years ending in 2050. The average deficit in period 2015–2064 would be 0.15% GDP. At the end of the analyzed period, the deficit will increase up to –1% of GDP, which decreases the baseline deficit by half and its value is lower than in 2014.

These simulations illustrate that the adjustment of parameters does improve the balance of PAYG and it is possible to adopt the kind of changes that would bring the future deficit close to zero, supposing that we consider 25% the real costs per worker. The government can also increase the revenues of the system, although not very significantly, by introduction of annual clearance of the contributions (already performed in the Czech Republic).

Bulgaria

Based on the analysis of the qualitative and quantitative parameters of the PAYG system, we recommend to:

1) Refrain from raising pension contributions due to high share of informal economy in labor relations and strong elasticity of tax compliance to tax levels.
2) Focus on closing loopholes on the expenditure side such as stronger control over disability pensions and reform of the regime of early retirement for certain professions. Disability pensions already represent 1/3 of all new pensions in 2014.
3) Increase the retirement ages for both sexes and for all categories of workers at a faster rate than the currently planned (by 1, 2 or 3 months per year depending on the year, the sex and the worker's category).
4) Draft a plan for gradual transition to a dominant capital pension system, where retirement income relies on accumulated savings and not on political promises. This transition can happen with the gradual reduction of contributions to the PAYG pillar and simultaneous increasing contributions to the 2nd pillar. The transition would require the payment of a temporary, but substantial cost that can be covered from taxes, privatization and concession revenues.

Poland

The return to previous retirement age, currently discussed in Poland, is a serious threat to the sustainability of the pension system. The negative impact of such move on the deficits of the pensions system would be alleviated by the pension formula (paid contribution divided by further life expectancy), but it will create political pressure for further changes. The pension formula prevents the explosion of deficit in the pension system, but at the cost of lower pensions. So with growing number of people receiving very low pensions, the political pressure for changes will grow. So the most important issue in Poland at the moment is to defend the already implemented reforms and fight attempts to wreck the current pension system.

Besides the most urgent task of defending the rise of retirement age, the other reforms can make pension system in Poland more robust. As far as the general pension scheme (ZUS) is concerned, reintroducing negative indexation of notional accounts during the downturns is important, as well as removing some other small rigidness (e.g. distorted monthly indexation of notional accounts for people retiring between full periods). As far as occupational schemes are concerned – they should be gradually phased out, not only for the sake of the pension system, but also to foster GDP growth. Generosity of occupational pension schemes in Poland is a costly and artificial barrier that limits movement of workers between sectors, thus hampering effectiveness of allocation in economy. Another piece of pension puzzle that needs to be worked out are the disability pensions that should be aligned to the old age pensions formulas. There is some room for higher pension revenues through closing different loopholes that allow for some types of contracts to remain uncovered by contributions, but this should be done with caution, so as not to destroy workplaces for some least productive workers. Last but not least reforms fostering the growth of employment would also have obvious positive impact on the contribution base and on revenues of the pension schemes.

Conclusion

There are several ways how to interpret the sustainability of the pensions system. In this paper we tried to focus on its deficit with respect to demographic changes in societies.

In case of Slovak PAYG, we show that it is possible to almost eliminate the PAYG deficit, if the parameters are correctly balanced. But this conclusion is subject to two basic assumptions not easy to achieve in political reality. First, the government would need to admit that actual real costs per worker are not 18%, but 25% of the salary. Second, the model predicts significant drop in benefit ratio which means that the average public pension in 2060 will be close to the level, which is now considered to be a minimum pension. This is obviously easy to model but very difficult to communicate to electorate and sustain it without increasing generosity of the system.

In case of the Polish pension system, we show that the main part of the pension system was planned to be actuarially fair and that it is possible to link the payments of pensions to the amount of collected contributions. The pension system, however, is distorted by privileged groups (police and army officers, farmers, miners), a situation, which creates costly exceptions. Furthermore, political meddling with indexation and valorization formulas represents a constant source of distortions in the fundamentally sound PAYG run by ZUS.

In case of the Bulgarian PAYG system, we show that real expenditures are double the size of the money paid in contributions. The systems lacks transparency of financing as half of the pensions is financed from taxes. This is an effect of current unfavorable demographic situation and prevalent informal economy resulting in low support ratio already today. An attempt to balance the PAYG system by an increase of contributions rate would most probably result in even higher number of informal work contracts. On the contrary, it is essential to adopt changes that will limit the growing costs of disability and early pensions. Should the workers be able to receive adequate pensions in future, larger share of their contributions must be directed to the funded pillar, as the current settings of the PAYG pillar is rather unsustainable.

In general, we have shown on several examples of changes adopted in all the three countries that the political system is the single biggest risk of sustainability of the PAYG systems. Unfortunately, a balance in these systems is often interpreted as a signal for more generous promises and higher pensions. Technically it is possible to plan balance in public pension system. Nevertheless, the time difference between the current promises and future deficits make this system prone to permanent deficit. Typical feature of all systems is an unwillingness to transparently show the real costs of the pensions system. The deficit is hidden in the structures of public budgets while the workers are misinformed about its size by relatively low contributions rates.

Furthermore, even the technically balanced PAYG systems are not immune to economic downturns. A prolonged period of higher unemployment resulting in lower revenues from contributions can easily reveal the natural feature of the PAYG pensions system – it is not wealth creating, but claims creating system. This negative feature can be mitigated by sufficient reserve, but as we have mentioned earlier there is no political power

which would sacrifice current surplus for future problems. High dependence of the PAYG system on political will is its largest drawback and a reason for permanent deficit management.

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