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Assessing the 2005 Czech
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ASSESSING THE 2005 CZECH PROPOSALS FOR PENSION REFORM

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By

Philip Hemmings and Edward Whitehouse

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ABSTRACT/RÉSUMÉ

Assessing the 2005 Czech proposals for pension reform

The Czech Republic faces one of the largest demographic challenges in the OECD area and making sure the public pension system is able to cope with rapid population ageing is important for long-term fiscal stability and social welfare. This paper assesses five proposals for pension reform made in late 2005 with a view to helping progress towards a final decision on reform. The proposals cover a wide range of options: only parametric change of the current pay-as-you-go (PAYG) system, systems combining a PAYG pension with a second-pillar (defined-contribution), a flat-rate pension and a system of notional accounts. The analysis uses OECD simulation models to compare the proposals in terms of fiscal sustainability, safety nets, early retirement incentives, diversification into private provision, simplicity and the pensions-earnings link.

This Working Paper relates to the 2006 OECD *Economic Survey of the Czech Republic* (www.oecd.org/eco/surveys/czech).

JEL codes: D10, H55, J14, J18

Keywords: Czech Republic; pensions; public expenditure; early retirement.

* * * * *

Évaluation des propositions de la République tchèque de 2005 sur la réforme des retraites

La République tchèque se trouvera confrontée à l'un des problèmes démographiques les plus aigus dans la zone de l'OCDE, et faire en sorte que le système public de retraite résiste à la forte augmentation des cohortes de personnes âgées est essentiel à long terme pour la stabilité budgétaire et la protection sociale. On examinera dans ce document cinq propositions de réforme des retraites formulées à la fin de 2005, le but étant de faciliter la prise de décision finale. Ces propositions couvrent un large éventail de formules : une modification uniquement paramétrique du système actuel de répartition, des solutions combinant la répartition et un deuxième pilier (à cotisations définies), une pension de retraite uniforme et un système de comptes virtuels. On s'appuiera sur les modèles de simulation de l'OCDE pour comparer ces propositions sous les aspects suivants : viabilité budgétaire, filet de sécurité, incitation à la retraite anticipée, diversification au profit d'une couverture privée, simplicité et lien entre pension de retraite et revenu d'activité.

Ce Document de travail se rapporte à l'*Étude économique de l'OCDE de la République tchèque 2006* (www.oecd.org/eco/etudes/tcheque).

Classification D10, H55, J14, J18

Mots clés : République tchèque ; système de retraite ; dépenses publiques ; retraite anticipée.

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ASSESSING THE 2005 CZECH PROPOSALS FOR PENSION REFORM

By

Philip Hemmings and Edward Whitehouse¹

1. In 2005, five proposals for pension reform were developed by experts from the main political parties in a special working group.² The proposals differ radically, covering all the main types of pension systems and reforms seen in OECD countries. They therefore provide a full range of options for policymakers to work with in making a final decision. Co-ordination and technical expertise was provided by an executive team, including economists from the Central Bank and government ministries. This process helped considerably in ensuring that the proposals were detailed on a comparable basis under agreed assumptions, for instance about future economic and demographic developments. The executive team published a report on the current system and the five proposals in June 2005.³ Soon after, there was an attempt to reach agreement on reform among the political parties but this failed, effectively postponing the final decision until after the June election.

2. This paper assesses the five proposals with a view to helping progress towards a final decision on pension reform. The focus of the analysis is on the pension systems that will be in place once the reform processes in the proposals are complete. It therefore abstracts from some important issues, notably the fiscal implications of the proposals during the transition period and the inter-generational distribution of income. These issues are, however, amply covered in the executive team's report. The assessment begins with a broad comparison of the current pension system with systems in other countries. This is followed by sections comparing various dimensions of the reform proposals. A final section sums up the strengths and weaknesses of the proposals and recommends a number of avenues for improvement (these are summed up in Box 1).

1. Philip Hemmings and Edward Whitehouse are staff economists at the OECD. This paper draws on material originally produced for the *OECD Economic Survey of the Czech Republic* published in June 2006 under the responsibility of the Economic and Development Review Committee. The authors would like to thank OECD colleagues Andrew Dean, Alessandro Goglio, Val Koromzay and Andreas Wörgötter for their comments as well as Margaret Morgan for statistical assistance. The paper has benefited from numerous discussions with Czech officials, particularly Vladimír Bezdek, Jiri Kral and Ales Krejdl. The pension modelling results were also discussed at a joint ILO/government of the Czech Republic conference on pension reform in Prague in December 2005.

2. It should be noted that the proposals represent the intentions of the individual parties -- there was no common proposal of the parties forming the government and none of the proposals reflect the official position of the Czech authorities.

3. An English translation of the report on the pensions proposals has been available since September 2005 and is available, along with additional information on the pensions proposals on the Ministry of Labour and Social Affairs website at www.mpsv.cz/en/1606.

Box 1. Policy recommendations on the latest pension proposals

Compared with most OECD countries that have embarked on fundamental pension reforms, the Czech Republic starts from a relatively strong position. Moreover, it would be easy to improve the performance of most of the reform proposals relative to objective criteria. Indeed, the required fixes would not undermine the core approach of the different proposals.

In terms of **fiscal sustainability** the proposals could be strengthened by:

- The introduction of an automatic procedure for adjusting pensions in payment (“indexation”), rather than continuation of the current discretionary approach which all the proposals currently suggest.
- Indexation to price inflation only, as proposed in the defined-contribution (DC) carve-out reform, could also be adopted in other proposals. This being said, given the expected catch-up in GDP per capita by the Czech economy, a transitional phase of indexing based on inflation and wage growth may be warranted to avoid pressures for adjustments to the pension system part way through the reform process.
- In the proposal for parametric reform, the delayed start to retirement-age increases should be reconsidered because of the cost during the transitional phase of reform.
- Permanent cross-subsidies from other taxes to finance the pension system that feature in some of the proposals should be avoided.

The flat-rate proposal does not deal adequately with the **safety net** issue. A higher basic pension of around 35% of average earnings would still offer fiscal improvement relative to the current system but substantially improve the safety net for people with low incomes or interrupted careers.

The relatively poor **retirement incentives** in the parametric reform and the proposal for carve-out DC accounts could be fixed with changes to the adjustments for early and late retirement. The DC carve-out scheme would also be improved if, as in the other proposals, differential retirement ages for women were phased out.

Some aspects of the proposed pension systems are however inherent to their design: notably the degree of **diversification in pension provision**, level of **simplicity** and, most importantly the strength of the **pensions-earnings link**.

The tax treatment of pensions was not covered by the 2005 working group. However, this issue needs to be addressed, particularly the system of subsidies and tax allowances on voluntary contributions to private pension funds. Reform needs to take account of the growing international evidence that tax incentives are often costly and ineffective in inducing more saving. The final decision on pension reform also needs to consider the implications for the welfare system and the coherence of benefit schemes with pensions.

Key features of the current pension system

3. The public pension system is currently financed on a pay-as-you-go (PAYG) basis, meaning that today’s workers’ contributions pay for today’s pensions. Pension contributions currently total 28% of earnings, of which 6.5 percentage points are paid by employees and 21.5 points by employers (see Annex). These are among the highest in the OECD countries: only Hungary, Italy and Slovakia levied a higher contribution for pensions in 2004 (OECD, 2005a).

4. The retirement age is gradually being increased from 60 to 63 years for men and from a range of 53 to 57 years to a range of 59 to 63 years for women with the retirement age depending on the number of children they have had. These scheduled increases in pension-eligibility age will be completed by 2013. Given that people should have advance notice of pension-age increases, so that they can plan for

retirement, a decision on policy after 2013 is needed soon. Indeed this is one of the main factors prompting the recent pension-reform debate.

5. Public retirement-income provision has a number of components. The most important is the earnings-related scheme. This has a redistributive formula, because the assessment base for the pension is 100% of earnings on the first slice of pay, then 30% on the next slice and finally 10% (see Annex). There is also a modest basic pension, paying a flat-rate amount to all eligible, which is worth around 8% of economy-wide average earnings. The social-assistance system provides a safety-net through mean-tested benefits (the “minimum living allowance”).

6. Pensions in payment are adjusted annually to reflect changes in costs and standards of living but with some discretion over the rate of increase. Total pension entitlement (basic plus earnings-related) must be increased by at least price inflation plus one-third of average real earnings growth. However, increases have recently tended to exceed the required minimum.

7. The personal income tax provides indirect support for older people through a large tax allowance on pension income: about four times larger than the standard tax-free allowance (Annex). Indeed, pensioners with incomes of less than 80% of average earnings do not pay any income tax. This effectively exempts older people from tax unless they have substantial income from voluntary pensions or other sources. Moreover, even pensioners who are liable to tax pay at a lower rate than that levied on earnings. The result is that pensioners pay substantially less in taxes than workers even when they have the same income.

8. There is support for voluntary, private or “third-pillar” pensions through a combination of matching state contributions and tax relief on employee and employer contributions. The system is quite complex but essentially means there is state support for the first CZK 18 000 of voluntary contributions (this is equivalent to about 8% of current average earnings). The net tax cost of voluntary pension savings is 40% of the contribution, the highest in the OECD and around double the average; the matching subsidy makes an important contribution to this cost (Yoo and de Serres, 2004, Figure 2). However, employees do not take full advantage of this concession. Although coverage is broad, the average contribution is small: a World Bank report shows the average contribution rate to be 2.5% of individual gross earnings.

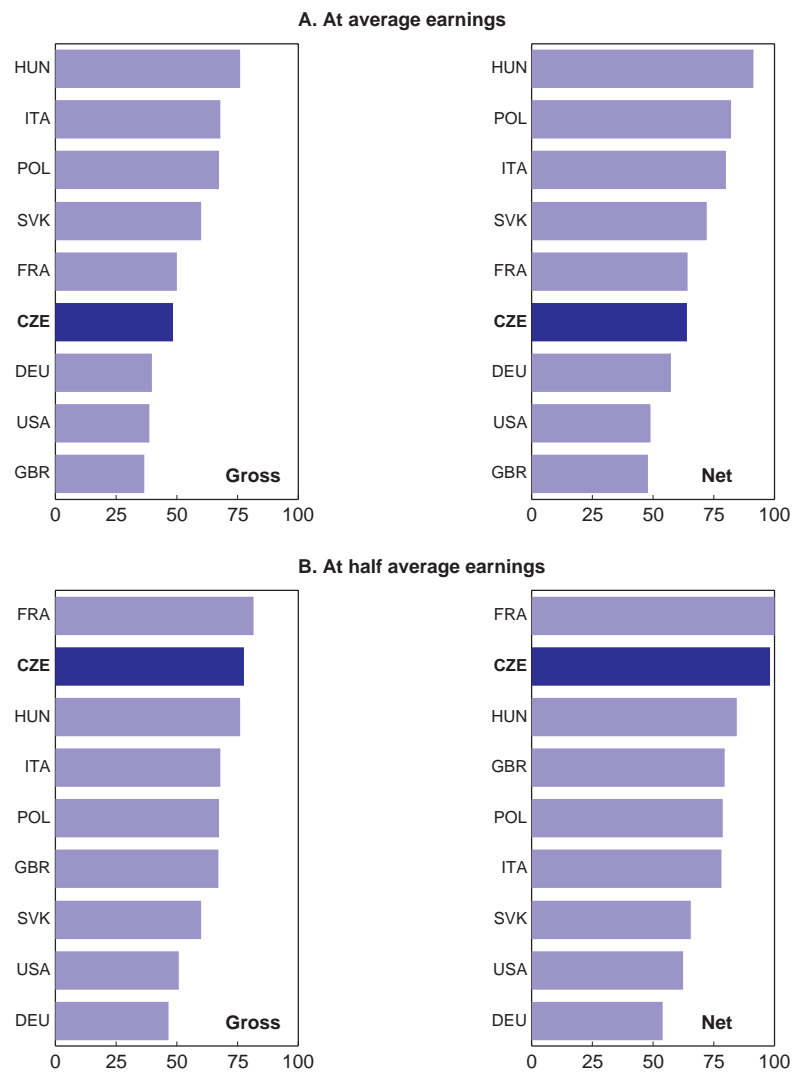
The current system in international comparison

9. Figure 1 shows how the pension promise in the Czech Republic compares with a range of OECD countries. The left-hand charts show the gross replacement rate: this is simply the value of the pension entitlement relative to individual earnings. (The underlying calculations are described briefly in Box 2 and at length in OECD, 2005b.) The upper panel of charts show the position of an individual who earns the economy-wide average each year.

10. The gross replacement rate for an average earner under current pension parameters and rules is just under 50% in the Czech Republic. This is below the average for all 30 OECD countries of 58%; it is around the same level as in France. But it is below the replacement rate promised in the other three Visegrad countries, which varies from 60% in Slovakia to 75% in Hungary.

11. Turning to the position of low earners – defined here as individuals who earn half of economy-wide average earnings each year – the Czech Republic promises a replacement rate of 78%. Although this is higher than in the other countries shown, this is not much more than the OECD average replacement rate for a low earner of 74%. Particularly striking here are the very low entitlements in Germany and the United States.

Figure 1. **International comparison of pension replacement rates**¹
Per cent



1. A gross/net pension replacement rate is the ratio of an individual's gross/net pension to gross/net earnings. Average earnings are those of the average full-time production worker.

Source: OECD pension models.

Box 2. What do the OECD pension models calculate?

The OECD pension models are “microeconomic”: they work out, hypothetically, how much pension a person would get, given the various parameters and rules of the pension system and projections in life expectancy.

It is important to underscore that the model describes the *long-run* economics of the pension system. Parametric reforms (such as, increasing the pension-eligibility age) are typically incremental and new systems are introduced slowly (those above a certain age are given a choice to remain in the old system or switch to the new system). These simulations abstract from these transition processes and so from the inter-generational redistributive impact of change. One way of thinking about them is that they describe the pension deal facing the current generation of young people who are just about to enter the labour market, and the generations that follow.

The main assumptions are:

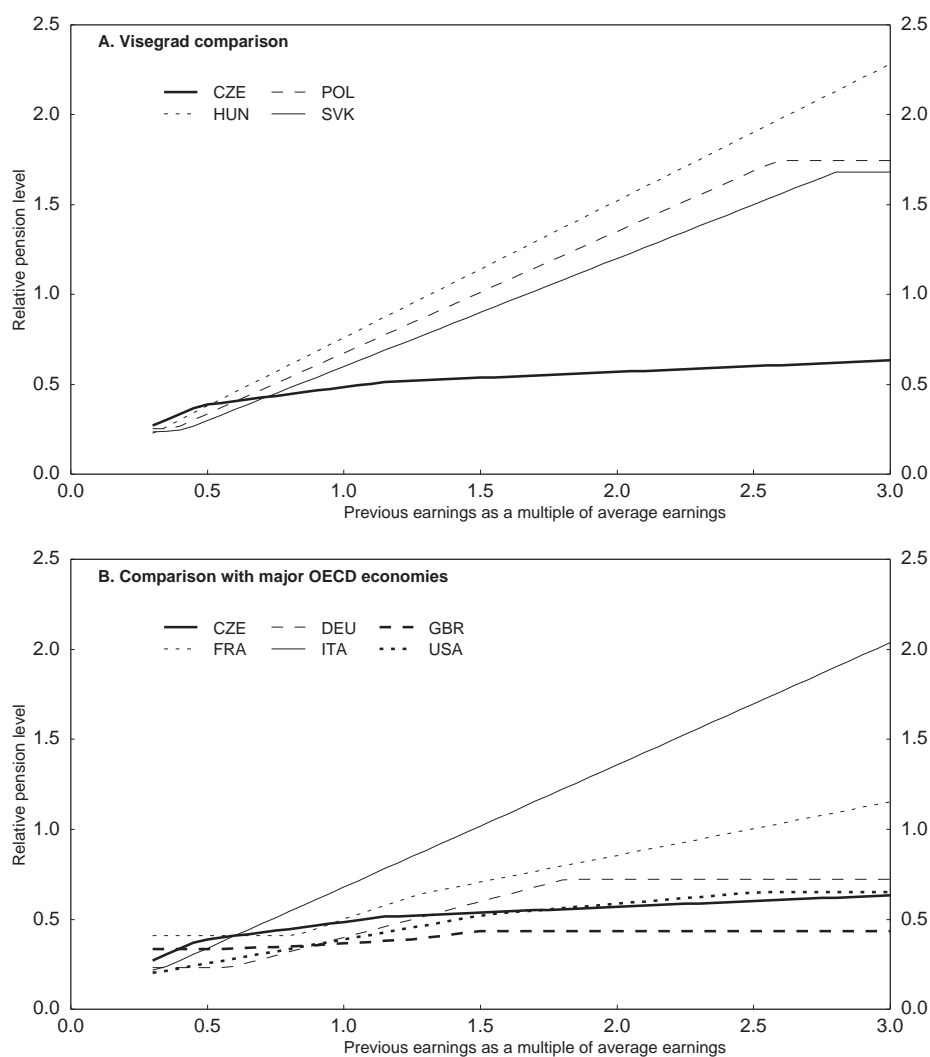
- An individual is assumed to begin work at age 20 and remain employed until the normal pension age, assumed to be 65 in reforms and 63 (for men) in the baseline
- Real earnings growth: 2% per year
- Individual earnings growth in line with the economy-wide average
- Real wage bill growth: 1.6% per year
- Price inflation: 2.5% per year
- Real return on DC schemes, net of administrative charges: 3.5% per year
- Discount rate: 2% per year
- Mortality rates: 2040 projections

Finally, the simulations do not cover voluntary pension contributions and therefore there is no account taken of public support for “third pillar” pensions through tax breaks.

12. Net replacement rates, shown in the right-hand part of Figure 1, take account of taxes and contributions paid both when working and when drawing the pension. They are the ratio of pension entitlement, net of taxes, to earnings, net of taxes and contributions. Net replacement rates are nearly always higher than gross, because of specific concessions to older people in the personal income tax, the general progressivity of income taxes and because pensioners typically do not pay social-security contributions or do so only at a low rate.

13. The net replacement rate for an average earner is 64% in the Czech Republic, compared with 72% for the 30 OECD countries on average. For a low earner, the net replacement rate in the Czech Republic approaches 100%, compared with a little less than 90% for the OECD as a whole.

14. A comparison of replacement rates at different levels of earnings reveals fundamental differences between countries in the core philosophy of their pension systems. There are two central objectives of retirement-income regimes. The first is “adequacy”: guaranteeing that all older people meet a minimum standard of living. The second, more ambitious objective, is “insurance”: guaranteeing that retirees have a certain standard of living relative to when working, that is a particular replacement rate. Figure 2 shows how different OECD countries place different emphasis on these two objectives of pension systems. The vertical axis shows the relative pension level, that is, the pension entitlement compared with economy-wide average earnings. The horizontal axis shows people at different levels of earnings relative to the economy-wide average.

Figure 2. International comparison of relative pension level¹

1. Individual pension divided by economy-wide average production-worker earnings.

Source: OECD pension models.

15. The pattern of pension entitlements against earnings is very different in the Czech Republic from that in the other Visegrad countries. In Hungary, Poland and Slovakia, there is a very strong relationship between how much people earn when working and how much their retirement income will be. The combination of a basic pension and a progressive benefit formula in the earnings-related scheme means that there is much less of a connection between earnings and pension entitlements in the Czech Republic.

16. With its emphasis on adequacy rather than insurance, the Czech Republic's pension system implies a pattern of benefits against earnings that is similar to the United Kingdom and the United States, for example. The stronger insurance element is more marked in Italy and the other Visegrad countries as evident in the scale and pattern of pension promises. France is an intermediate case while the results for Germany are fairly close to the Czech Republic.

Key features of the five reform proposals

17. The five proposals made by the main political parties cover a wide range of reform options, which include all the essential types of pension system seen in the OECD (Table 1). They are:

- Notional accounts (Czech Social Democratic Party, CSSD). Pensions remain publicly provided and financed on a PAYG basis. But entitlements are calculated differently from the “traditional” defined-benefit (DB) model. Under notional accounts, contributions are recorded and then earn a notional interest rate, which is linked to macroeconomic variables. At retirement, the accumulated notional capital in each account is converted to a stream of pension payments using a formula based on life expectancy at the time of retirement.
- Defined contribution (DC) “carve-out” (coalition of the Christian Democratic Union and the Czechoslovak Peoples Party, KDU-CSL). The DB pension system is retained but individuals can transfer 8 percentage points of the pension contribution into a private DC pension, subject to a reduction in public benefits. In DC pensions, the value of the benefit depends on contributions paid in and investment returns earned. Individuals’ accumulated capital from contributions and investment returns is then converted into a stream of pension payments during retirement through buying an annuity.
- Parametric reform (Communist Party of Bohemia and Moravia, KSCM). This proposal involves modest and gradual changes to the parameters and rules of the current system.
- Flat-rate pension (Civic Democratic Party, ODS). A flat rate pension equal to 20% of previous earnings with no provisions for early or late retirement.
- Defined contribution (DC) “add-on” (coalition of the Freedom Union and Democratic Union, US-DEU). The defined benefit pension is maintained (with some parametric reform) but there is an option in which 3 percentage points of the standard 28% contribution can be transferred to a DC pension fund if the individual makes an additional 6% contribution to the fund (making the total contribution 34%).

18. For **contributions** to the pension system, three proposals aim to keep the same standard contribution rate as the current system (28% of earnings) or a slightly higher one through a diversion of contributions to unemployment insurance funds (Table 1, column 2). Only the parametric reform details further increase in the contribution rate in the long run while the flat-rate proposal exceptionally involves a reduction of the contribution rate to 20%. Two proposals include using additional revenue sources to help fund pensions. The carve-out scheme proposes earmarking some VAT revenue while the parametric reform proposes tapping into excise taxes. Additional contributions are required in the two proposals with a DC component from individuals choosing the DC option.

Table 1. **Key features of the five proposals for pension reform**

System	Contribution and additional financing	Retirement age	Calculation of benefits	Revaluation	Indexation	Early and late retirement provisions
0 Current system	Contribution of 28% of earnings	Increases to 63 years for men and 59-63 years for women are scheduled by 2013	Basic pension plus DB with progressive formula	Average earnings	Prices plus at least one-third of real average earnings growth	3.6% reduction in pensionable earnings per year of early retirement; 6% increment per year of late retirement
1 Notional accounts	Contribution of 29.6%, the extra 1.6% from a diversion of unemployment fund contributions	Further increase to 65 years for all	Notional accounts	Wage-bill growth	Prices plus at least half of real average earnings growth	Retirement up to 3 years early. Pension calculated on actuarial basis
2 Carve-out DC	Contribution of 28% of earnings and plus 2% extra from transition generations choosing DC. Additional financing from VAT revenues.	Further increase to 65 years, except for women who have had children	Change in DB benefits. 8% of earnings to DC	Average earnings on DB part	Prices	As in the current system for the DB component
3 Parametric reform	Contribution of 29.6% (as in notional accounts proposal). A 3% contribution increase from 2040 and further 0.9% increase from 2060 Additional financing from earmarking of 10% of excise taxes	Further increase starting in 2030 up to 65 years for all	Basic pension plus DB with progressive formula	Average earnings	Prices plus at least one-third of average real earnings growth	As current system
4 Flat rate	20% of earnings	Continuous increase up to and beyond 65 (finally reaching 71)	20% of gross average earnings	Average earnings	Average earnings	No provisions for early retirement
5 Add-on DC	28% of earnings, plus 6% extra contribution for those choosing DC	Increase for all up to 67 years	Change in DB benefits. 9% of earnings to DC	Average earnings on DB part	Average earnings for DC. Current system for DB	As current system, except reduction for early retirement increased to 6% per year

Source: Czech Government (2005).

19. All the proposals involve increases in the **retirement age**, but at substantially different rates. There are also some differences in the long-run retirement age (Table 2). The DC carve-out and add-on schemes have the fastest increases with, for instance, the retirement age for men being brought to 65 by 2024. In the notional accounts and flat-rate proposals, retirement ages for men reach 65 by 2030. The parametric reform has the slowest rate of increase, retirement age increases (beyond those already scheduled) do not begin until 2030 and the retirement age for men is not brought to 65 years until 2040. The DC add-on and flat-rate reforms take the retirement age beyond 65 years; in the DC add-on case to 67 years and in the flat-rate case continuous increase in the retirement age is proposed.

Table 2. Retirement age increases beyond 2013 under the five proposals¹

	Year in which retirement age will reach 65						Further increase beyond 65?
	Men	Women (no children)	Women (1 child)	Women (2 children)	Women (3 or 4 children)	Women (5 and more children)	
Notional accounts	2030	2033	2034	2035	2039	2043	No
DC carve-out	2024	2027	<i>never</i>	<i>never</i>	<i>never</i>	<i>never</i>	No
Parametric reform	2040	2043	2047	2051	2055	2059	No
Flat rate	2030	2030	2031	2035	2039	2043	yes, up to 71 years in 2100
DC add-on	2024	2027	2031	2035	2039	2043	yes, up to 67years

Source: Czech Government (2005), *Final Report of the Executive Team on Pension Reform*.

20. Four of the five reform proposals include phasing out of the “family-policy” dimension of the pension system by removing differences in retirement age for women depending on the number of children they have had. The DC carve out scheme, however, maintains different retirement ages for women and has lower contributions rates to the defined-benefit component depending on the number of children.

21. Average-wage growth is used as the basis for **revaluation** of past contributions in the calculation of pensions in all three of the reforms that maintain DB pensions (as in the current system). In the notional-accounts proposal, revaluation is effectively equal to growth in the aggregate wage bill. This provides a subtle economy in the reform, because the projected decline in the working-age population means that the wage bill is likely to increase at a slower pace than economy-wide average earnings. (The modelling assumes that the decline in the size of the workforce means that the wage bill will grow 0.4 percentage points slower than average earnings.)

22. The current policy for **indexation** of public pensions in payment is maintained under two proposals: parametric reform and DC add-on. The notional-accounts reform involves more generous indexation, whereas the DC carve-out scheme makes economies by indexing only to price inflation. The DC add-on option proposes that the DC element be indexed to average earnings while the public DB component would be indexed using current procedures. Both reforms with a DC element would calculate DC pension benefits using sex-specific annuity rates. There is some doubt, however, whether this is permitted under EU equal-treatment rules.

23. The flat-rate pension contains no provisions for early or late retirement. However, the other four proposals would allow **early retirement** with a permanent reduction in the pension. Under the DC add-on the penalty for early retirement would be increased. Otherwise, no change is proposed compared with the current system.

Simulation results for the five proposals

Implicit target replacement rates differ widely

24. The implicit target replacement rate is very different under the five proposals. Three of the reform proposals would significantly increase mandatory pension benefits for average earners, one would leave the target benefit broadly unchanged while the other would involve a substantial cut. Table 3 shows replacement rates for low, average and high earners under the five options.

- The gross replacement rate for average earners would remain around 50% with parametric reform. The notional accounts proposal and the two options with a DC element would increase the target replacement rate to 65 to 70%. This would be substantially higher than the average for the 30 OECD countries of 58%.

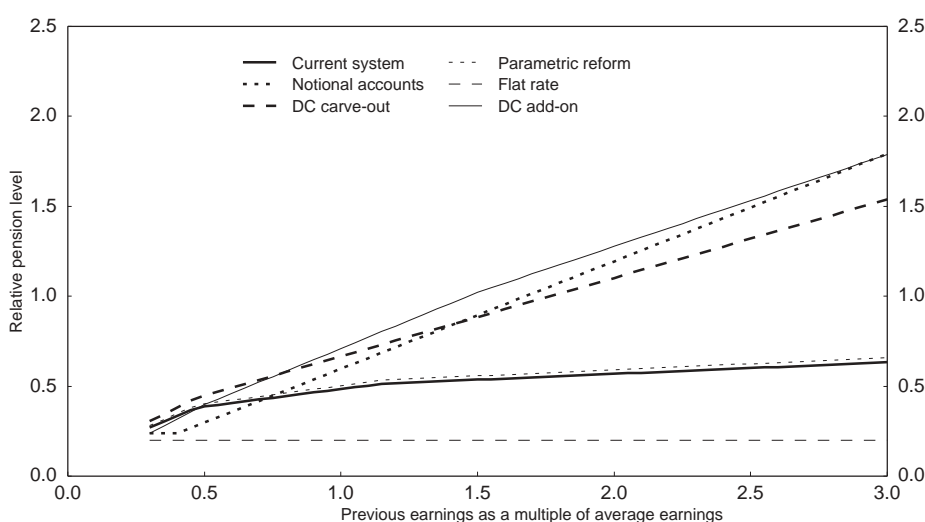
- For low earners, with pay of half the economy-wide average, the replacement rate is the same or higher than under current rules with parametric reform or either of the proposals with a DC element. But it would be lower under notional-accounts or flat-rate pensions, indeed, less than the OECD average of 74%.
- With pay of twice economy-wide average earnings – “high earners” – replacement rates would be significantly greater than the current system under three proposals: notional accounts and the two with a DC element. The proposed levels of 55-65% are higher than the OECD average of a little under 50%.

Table 3. **Gross and net replacement rates**

	Gross replacement rates (%) at multiple of average earnings:			Net replacement rates (%) at multiple of average earnings:		
	0.5	1	2	0.5	1	2
Current	78	49	29	98	64	40
Notional accounts	65	65	65	82	86	85
DC carve out	90	67	55	113	88	73
Parametric reform	81	50	30	101	66	41
Flat-rate	40	20	10	50	26	14
DC add-on	80	71	64	100	93	85

Source: OECD pension models.

25. Parametric reform apart, the proposals imply a significant departure from the relationship between pension and earnings inherent in the current pension system. This is illustrated more clearly in Figure 3, which shows relative pension levels against earnings. Notional accounts would result in a very strong relationship between pension and earnings, as in Italy and Poland, for example (Figure 2). Both DC proposals would also reduce the progressivity of benefits relative to the current system. The flat-rate system would move in the opposite direction.

Figure 3. **The relative pension level for the five pension proposals¹**

1. Individual pension divided by economy-wide average production-worker earnings.

Source: OECD pension models.

Gauging the “size” of the five proposed pension systems

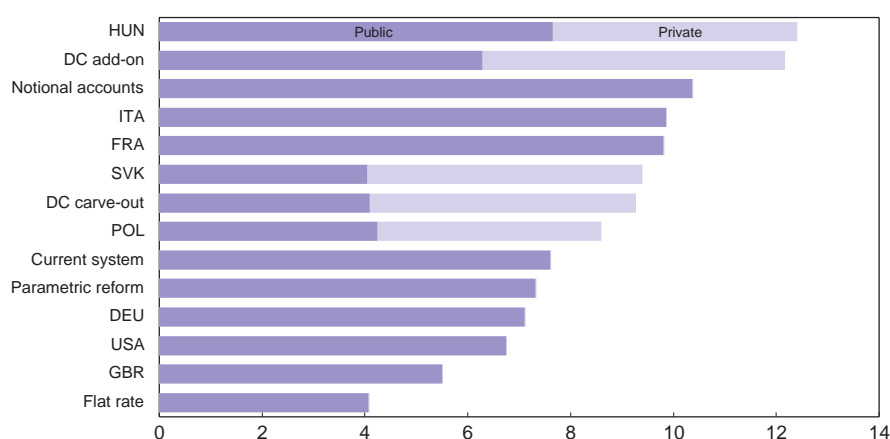
26. There will be significant differences in the “size” of mandatory pension systems that would emerge in the long-term from the five proposals for reform, as is obvious from the pattern of entitlements shown in Figure 3. The reforms introducing stronger connections between contributions and earnings would produce much larger mandatory pension systems, with larger pension promises.

27. A microeconomic measure of the size of pension systems is “average pension wealth”. This is a more comprehensive indicator than the replacement rates and relative pension levels presented above. The reason is that the pension-wealth indicator takes account of life expectancy, retirement ages and the indexation of pension benefits. These factors determine for how long the pension benefit must be paid and how its value evolves over time. Formally, pension wealth is calculated as follows. The flow of pension entitlements during retirement is converted into a present value (measured at the time of retirement), which is the stock of pension “wealth”. The calculation uses standard actuarial techniques. Pension wealth is computed for people at different levels of earnings, from 30 to 300% of the economy-wide average. Then, using the OECD’s earnings-distribution database, these results are converted into the aggregate average pension wealth, which is weighted by the proportion of the labour force at different levels of earnings. Average pension wealth is expressed as a multiple of economy-wide average earnings. Overall, average pension wealth shows the size of the resource transfer necessary from the working-age population to retirees. Average *public* pension wealth shows the scale of the fiscal transfer.

28. Comparisons of average pension wealth indeed show wide differences across the five proposed pension systems (Figure 4). The DC add-on pension system would be the largest, with average pension wealth per person equivalent to 12 times economy-wide average earnings. However, about half of this would be in the hands of private-sector funds.

29. In terms of public pensions, the notional-accounts scheme would be by far the largest, with average pension wealth per person equivalent to about 10 times economy-wide average earnings. This is similar to the size of public pension systems in France and Italy. In comparison, pension wealth under the parametric-reform proposal would be about 7 times average earnings. This is similar to the results for Germany and the United States. The public pension promises in the defined-benefit component of the DC carve-out scheme and the flat-rate pension would be relatively low in international comparison.

Figure 4. **Average mandated pension wealth per person as a multiple of economy-wide earnings**¹



1. Average for men and women. Because the calculations only include mandated pension wealth, voluntary contributions to private pensions are not included. Private pension wealth is included, for example, where there is a compulsory “second pillar” component.

Source: OECD pension models.

Early retirement incentives

30. It is widely accepted that financial incentives to retire at particular ages built into pension systems have an effect on retirement behaviour (Gruber and Wise, 1999 and 2004). Reversing the trend towards earlier retirement, even as life expectancy has generally been increasing, would do much to limit the burden of population ageing. Increasing effective age of retirement is therefore a policy priority in most OECD countries (OECD, 2006). Even if one is sceptical about the effects of incentives on behaviour, there is an inherent inequity if, for example, early retirees do better out of the pension system than those who stay in work longer. For these reasons, the effect on pension entitlement of retiring early or retiring at the normal age is important in designing pension systems.

31. The financial incentive to retire depends on two variables. The first is the relationship between income out of work (retirement pension) and income in work (earnings). This is, of course, simply the replacement rate. However, unlike analysis of work incentives with unemployment benefits, for example, account must also be taken of the linkage between earnings and contributions on the one hand and pension entitlements on the other. This is captured in a second measure: the change in pension wealth from remaining in work. Pension wealth – the present value or the stock related to the flow of pension payments – was defined above. The change in pension wealth from remaining in work can be thought of as an implicit tax or subsidy on work.

32. Table 4 shows calculations of these indicators of retirement incentives. The first two columns of the Table give the gross replacement for people who retire at age 62 and age 65 respectively. The flat-rate proposal does not allow for early retirement. Under parametric reform, the replacement rate would be just over 40% at age 62. In the other three proposals – notional accounts and defined contribution – the replacement rate at the early pension age is 50-55%. At the “normal” pension age of 65, the replacement rate varies from over two-thirds in the two DC proposals to just 20% in the flat-rate option.

33. The final column shows how the replacement rates at different ages affect pension wealth. Take the notional-accounts proposal as a first example. Working from age 62 to 65 would increase the replacement rate from 50 to nearly 60%. However, pension wealth would still in fact fall, because to get the 60% replacement rate from age 65, the individual has to forego benefits worth 50% of earnings per year between 62 and 65. The loss in pension wealth from remaining in work over the three-year period is calculated to be 40% of a single year’s earnings, implying an additional implicit tax on workers aged 62 to 65 of 13% per year. The fact that the notional accounts pension proposal has the weakest incentives to continue working is counterintuitive. Notional accounts pensions are actuarially fair in the sense that the present value of lifetime contributions equals the present value of lifetime benefits provided that the notional interest rate and the discount rate used in calculating pension entitlements are equal to the long-term government bond interest rate.⁴ However, this means that they are not actuarially neutral, *i.e.* the accrued pension wealth is not the same whether one retires today or in the future. This is because the actuarial calculation naturally assumes that the individual has survived until the age of retirement. But, say a 62 year old choosing between retiring now and at age 63, to achieve actuarial neutrality, requires additional actuarial compensation for the probability of dying within the year.⁵ The reason people find the result counterintuitive is because it is easy to confuse these distinct actuarial concepts.

4. This specific definition of actuarial fairness described here is often described as “pay-as-you-go” actuarial fairness, see Queisser and Whitehouse (2006).

5. Such compensation has in fact been proposed under national accounts variant in the Czech Republic. The pension rights of the decedents would be distributed among the survivors of the same generation, thus increasing the pension wealth (this effect has not been reflected in the calculations).

34. Under the parametric reform, the replacement rate is also 10 percentage points higher at age 65 than at 62, but the gain is on a lower base. Therefore, the loss in pension wealth from retiring at the earliest opportunity is smaller than under the notional-accounts proposal. However, there is still a marginal disincentive to work between 62 and 65. This is because the adjustment to pension benefits for early retirement is a little below the actuarially equivalent level, which the OECD pension models calculate to be around 7.5% (see Queisser and Whitehouse, 2006 for an explanation).

35. The flat-rate scheme is neutral between retirement at different ages because the benefit is unaffected. Finally, incentives to stay in work – as measured by the change in pension wealth – are most powerful under the DC add-on scheme. This is due both to the DC component and to the larger reduction in public pension benefits for early retirement. However, it is important to bear in mind that this proposal has one of the highest replacement rates, which will tend to discourage people from working.

Table 4. Indicators of incentives to take up early retirement

	Gross replacement rate by retirement age (%)		Change in pension wealth (%) from 62-65
	Age 62	Age 65	
Notional accounts	50.0	59.8	-39.9
DC carve out	55.0	66.7	-29.1
Parametric reform	40.8	50.4	-9.0
Flat-rate	0.0	20.0	0.0
DC add-on	51.9	71.1	+69.1

Note: gross replacement rate is gross pension relative to gross earnings. Change in pension wealth is shown relative to one year's earnings.

Source: OECD pension models.

Assessment

36. The five parties' proposals would take the Czech pension system in very different directions. There are clear precedents in other OECD countries for all of the proposals and so useful lessons can be learned from international experience. Table 5 summarises an objective, albeit qualitative, assessment of the five proposals on six criteria.

Table 5. The five pension proposals measured against six criteria

	Fiscal sustainability	Safety nets	Early retirement incentives	Diversification public/private	Simplicity	Benefit/contribution link
Notional accounts	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■
DC carve-out	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■
Parametric reform	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■
Flat-rate	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■
DC add-on	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■

Source: OECD.

Fiscal sustainability

37. The first and most important of these criteria is fiscal sustainability. Fiscal sustainability depends on both the expenditures and the revenues of the pension system. But a smaller public pension promise is more easily afforded than a larger one because, even if extra contributions or other sources of revenues are raised, there is still an opportunity cost in diverting these resources to pension provision. Sustainability is therefore assessed against average public pension spending per person (see Figure 4).

- The notional accounts proposal involves the largest fiscal outlay, more than 50% larger than the current system.
- Both the flat-rate scheme and the DC carve-out involve public pension spending nearly 50% lower than the baseline and so are the most fiscally sustainable.
- The parametric reform and DC add-on lie in between in terms of their affordability.

38. Fiscal sustainability would be strengthened by an automatic procedure for adjusting pensions in payment (“indexation”), rather than continuation of the current discretionary approach, which most of the proposals suggest. International experience is littered with examples of how discretionary adjustment of pensions in payment leads to instability in the purchasing power of retirement incomes and conflict in setting the rate of pension increase.

39. Furthermore, indexation to price inflation only, as proposed in the DC carve-out reform, could also be adopted in other proposals. Most OECD countries now index pensions in payment to prices, having moved from earnings indexation in the 1980s and 1990s. The cost savings in the Czech system could be large, thereby allowing a higher starting replacement rate, other things being equal. By way of example, the OECD pension models show that lifetime pension expenditures per person would be about 15% lower with indexation only to prices compared with indexing at price inflation plus one-third real wage growth. Moreover, this is a lower-bound estimate of the savings, because the government often decides to increase pensions by more than the required minimum. Under a policy of price indexation, the real purchasing power of pensions during retirement would still be preserved. This being said, given the relatively rapid growth expected due to catch-up in GDP per capita in the Czech economy, inflation-only indexing can mean pensioners slip unacceptably far down the income distribution. This could create pressures for adjustments to the pension system part way through the reform process – something that should be avoided to contain the risks households face in long-term financial planning. For this reason, a transitional phase of indexing based on inflation and wage growth may be warranted.⁶

40. While the long-run fiscal sustainability of the parametric reform is not a cause for great concern, the delayed start to retirement-age increases should be reconsidered because of cost issues in the transitional phase of reform.

41. This delayed start to retirement age increases in the parametric reform has probably contributed to the rather *ad hoc* proposals for extra financing in this proposal. For this and other proposals, permanent cross-subsidies from other taxes should be avoided. Earmarking additional revenue sources on top of contributions clouds the issue of who is paying for what in the pension system and should be used sparingly and only to help get through a limited period of financial strain. There is an opportunity cost involved in diverting tax revenues to the pension system that should not be ignored. However, the Czech Republic has one of the highest burden of direct taxes on labour and so broader financing of the costs of social protection might be worth sacrifice of transparency in the public finances.

Strength of safety nets

42. The second criterion is the strength of the safety nets to protect low-income workers or those with interrupted careers. Poor safety nets risk a resurgence of old-age poverty or involve a shift of retirement-income expenditure onto the social-assistance budget.

6. Note that indexation of private annuities to average earnings – as suggested in the DC add-on proposal – would not be possible for insurance companies unless the government were to issue wage-indexed bonds.

43. The current system has quite a strong safety net due to the combination of a 100% replacement rate on the first slice of pensionable earnings, the basic and minimum pensions and support through the social-assistance system. This is reflected in the fact that only 1.3% of 66-75 year olds are classified as poor by the OECD (Forster and Mira d'Ercole, 2005). This is the second lowest old-age poverty rate out of 27 OECD countries and way below the average rate for these countries of 11.5%.

44. As regards the proposals, the DC carve-out and add-on schemes would broadly maintain the safety net of the current system, as would, of course, the parametric reform. However, there are risks of inadequate safety net provision in the flat-rate and notional accounts proposals:

- The risk of inadequate safety net provision in the flat-rate proposal is very high. The flat-rate benefit of 20% of average earnings is very low and would offer little protection to vulnerable groups without the resources to save their own money for retirement. The current social-assistance target minimum income level is rather higher than this: around 24% of average earnings. Social-assistance spending would therefore probably substitute for pension spending under this proposal. Indeed, the proposed level is substantially below that in other countries with pure basic pensions. In Ireland, the basic pension is worth 32.5% of average earnings. The ratio of basic pension to earnings is 37.5% in New Zealand. A higher basic pension of around 35% of average earnings would still offer fiscal improvement relative to the current system but substantially improve the safety net for people with low incomes or interrupted careers.
- The notional-accounts scheme, which ties benefits more closely to individual earnings, would also weaken current safety nets, though not as much as the flat-rate proposal. Replacement rates for low-income workers would fall while average and high earners would have larger pensions.

Retirement incentives

45. The third measure used to assess the five proposals relates to retirement incentives. The current system has a very small incentive to retire early. But it is not far from being neutral with respect to the age of retirement.

- The DC add-on improves retirement incentives compared with the current system. First, this is because the reduction in benefits for early retirement is raised. Secondly, the DC element improves incentives to stay in work.
- A flat-rate benefit would also improve work incentives, because early retirement would not be possible and the low benefit rate would discourage retirement.
- Despite the “actuarial” basis of pension calculations, notional accounts do not provide strong incentives to stay on work beyond the minimum pension eligibility. Although the replacement rate increases from 50 to 60% for people who work from 62 to 65. This increment is insufficient to compensate for giving up pension payments between 62 and 65.

46. The relatively poor retirement incentives in the parametric reform and the proposal for carve-out DC accounts could be fixed with changes to the adjustments for early and late retirement. OECD calculations suggest that an adjustment of around 7.5%, based on normal retirement age of 65 and 2040 projected mortality rates, would be actuarially equivalent. This adjustment compares with an effective reduction for early retirement of 5.6% per year and an increase for late retirement of 6% per year in the current public pension. The DC carve-out scheme would also be improved if, as in the other proposals, differential retirement ages for women were phased out. The prospect of earlier retirement is almost

certainly a less effective instrument in family support compared with more immediate policies affecting families, such as support for childcare.

Diversification of pension provision

47. A fourth issue is diversification of pension provision. The OECD (1998, 2001, for example) has long argued that a diversified pension system bolsters retirement-income security. This can be achieved through balance between public and private provision and between pay-as-you-go and pre-funding as sources of finance.

- The DC carve-out and add-on proposals have an explicit role for private pension providers in the mandatory pension system.
- A low, flat-rate pension would mean that all but the lowest paid would need to make additional, voluntary, private provision for retirement. Again, the balance between public, pay-as-you-go and private, pre-funded pensions would shift.
- In contrast, the notional accounts scheme would undermine the role of voluntary, private provision relative even to the current system. This is because replacement rates in the public scheme for middle and high earners would increase. The public pension would substitute for private retirement saving by these groups.

Simplicity

48. Pensions are an inherently complex issue and retirement planning is made difficult by this complexity. There is a strong case for keeping pension systems as simple and transparent as possible (OECD, 2005c).

- Flat-rate schemes are very easy to understand and individual responsibilities for retirement provision (as well as their rights) are clear.
- The DC add-on proposal is scored the lowest on this measure because of its very complex set of parameters and rules.

The pensions-earnings link

49. The final question is the link between pensions during retirement and earnings and contributions paid when working. Because of the redistributive features of the current system, such as the basic pension and the progressive formula for earnings-related benefits, there is only a weak link between contributions and benefits.

- Notional accounts would introduce the strongest link between contributions and benefits of the five proposals.
- Both options with a DC element would also strengthen the pension/earnings connection compared with the current system.
- A pure flat-rate pension would, of course, entirely remove any links between pension entitlements and earnings when working.

50. The relative merits of strong pensions-earnings links have occupied academics, policymakers and the public for many years. These issues will probably never be resolved. The appropriate way forward is therefore a matter of political judgement. The pension-earnings link raises two closely inter-related issues.

51. The first is the degree to which the state should require individuals to save for their retirement because they are myopic and, left to their own devices, would make inadequate provision. This could leave them vulnerable to poverty in old age, reliant on state safety-net hand-outs and regretting their earlier savings decisions. Optimists argue that individuals can and do make informed decisions about how much they want to consume in retirement relative to when working. A limited mandate for providing for retirement through the pension system also allows people to prepare for retirement in more diverse ways (by saving through housing, for example). The DC add-on and notional-accounts implicitly have the greatest emphasis on counteracting individual myopia, because they have a very large mandate to provide for retirement.

52. A second core issue is the degree to which pension entitlements should be related to earnings when in work. Italy, Poland and Slovakia have all moved to strengthen the pensions-earnings link in recent reforms. In contrast, France and the United Kingdom, for example, have moved towards greater targeting of public pension benefits on lower earners thereby weakening the link between retirement incomes and earnings when in work.

53. Proponents of a stronger link between pension and earnings argue that this increases incentives to work (because contributions are seen less as an implicit tax) and to contribute to the pension system. However, these advantages must be weighed against the costs in weaker retirement incentives and, notably in the case of notional accounts, a much greater role for the public sector in providing retirement incomes and, so, reduced fiscal sustainability. Moreover, it is unclear that the improved incentives to work and to contribute for those who lose from the redistribution in the current system would offset the reduced incentives for those who would lose from the reform.

54. One way of reducing the risk of myopia in redistributive pensions is through (additional) tax support for “third-pillar” (*i.e.* voluntary, private) pensions. The Czech Republic, however already has the highest degree of tax support for voluntary pensions with a seemingly modest response. There is also growing international evidence of the high costs and ineffectiveness of tax incentives for retirement saving. There can be heavy “deadweight losses” in lost income-tax revenue as people simply shift their portfolios to take advantage of tax concession but do not save any more. Also, tax incentives need careful design to ensure that gains do not accrue mainly to middle and upper income earners (Yoo and de Serres, 2004).

55. While the tax treatment of mandatory pensions whilst in payment was not in the remit of the commission assessing pension-reform options, this issue needs to be reviewed. This is particularly true in reforms that strengthen pensions-earnings links and so give larger benefits to high earners. Currently, the concessions to pensioners and pension incomes in the personal tax system are very generous by international standards. Issues relating to the welfare system should also be addressed in the final decision on pension reform. Incentives created by, for example, means-tested benefits have to be coherent with those in the pension system. In addition, where pension reform is likely to affect the number of people claiming welfare benefit or create pressures for changes to the welfare system, this should be taken into account in assessing the overall cost of pension reform.

Conclusion

56. It would be relatively easy to improve the performance of most of the reform proposals relative to a number of objective criteria. Indeed, the required fixes are typically rather minor and they do not undermine the core approach of the proposals. Beyond this, making the final decision on pension reform

requires decisions on some fundamental issues, most notably how far the state needs to go in making households save for pensions and, linked to this, the usefulness of “political economy” gains in having mandatory pensions contributions linked to previous earnings. The technical approach to pension reform in the Czech Republic – with consistent comparisons of a range of detailed proposals – should serve as a model for other countries.

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Annex

The current pension system

Note: all values in this annex, unless otherwise indicated, refer to 2005.

Qualifying conditions

A phased increase in the standard retirement age will take it to 63 for men born in 1953 and later. The pension eligibility age will be 59-62 for women with children born in 1957 – 1960 and later (depending on the number of children that they raised) and 63 for women without children born in 1956 and later. 25 years' coverage is required as a minimum but people with 15 years' contributions can receive a pension from 65.

Benefit calculation

Basic

The value of the basic pension is CZK 1 470 per month, equivalent to nearly 8% of average earnings. There is no statutory indexation requirement for the value of the basic benefit alone but there are regulations on the minimum amount the pension must be increased (see below).

Earnings-related

The earnings-related pension gives 1.5% of earnings for each year of contributions. The earnings measure currently averages across all years since 1985, but it will gradually reach 30 years (in 2015). Earlier years' earnings are valorised by the growth of economy-wide average earnings.

There is a progressive benefit formula, with the first CZK 8 400 per month replaced at 100%, the slice of pensionable earnings between this limit and CZK 20 500 at 30% with 10% replacement above this level. The first threshold, below which there is 100% replacement, is equivalent to nearly 50% of average earnings, while the second threshold is 115% of average earnings. There is no statutory indexation requirement for these thresholds, but both have changed annually.

There is no specific statutory indexation requirement for the earnings-related pension component in payment. However, there are regulations on the minimum amount the pension must be increased. There is a regular increase in pensions every January. The combined total pension benefit (flat-rate and earnings-related components) must be increased by at least one third CPI growth of real wage growth, except when this amounts to less than 2% in which case there is no obligation to increase the pension. Increases during the year must also be made if monthly inflation accumulates to more than 10%. These intra-year increases are sometimes incorporated into the annual increase and this needs to be taken into account in assessing past data on pension increases, particularly in the 1990s when inflation was relatively high.

Minimum

The total value of the minimum pension benefit is CZK 2 170, which is made up of a minimum earnings-related pension of CZK 770 plus the basic component of CZK 1 400. This combined minimum pension is indexed in the same way as described above. It is worth just over 12% of average earnings. Less than 1% of pensioners are only eligible for the minimum pension, *i.e.* the vast majority have made sufficient contributions to bring their pension above the minimum. .

Social assistance

Older people are covered by the general social-assistance scheme and related benefits in kind. The target safety-net income for a single-person household is CZK 4 300 or nearly a quarter of average earnings. This is made up of a personal needs amount of CZK 2 360 plus a household needs amount of CZK 1 940.

Non-standard careers**Childcare**

Women are entitled to retire earlier depending on the number of children they have had:

Number of children	1	2	3-4	5+
Number of years of early retirement	1	2	3	4

In addition, there are credits for labour-market absences during periods caring for children up to four years old (or older in case of severe disability). These years are then ignored in the calculation of earnings for pension purposes so that these absences do not reduce the assessment base. (This approach is used for all non-contributory periods.)

Unemployment

Periods on earnings-related unemployment insurance are fully credited in the pension system. The duration of unemployment insurance entitlement varies with age: six months up to age 50, nine months from 50 to 55 and 12 months for over 55s. Up to three years spent unemployed without entitlement to unemployment insurance can also be credited. The unemployment period used for the pension calculation is reduced to 80%, meaning that if an individual had 5 years' unemployment over the career, this would count as 4 years for pension purposes.

Early retirement

It is possible to retire three years before the normal ages (which gradually increase up to 63 for men and 59-63 for women) subject to 25 years' contributions. The total accrual factor (*i.e.*, number of years of contributions multiplied by the accrual rate) is permanently reduced by 0.9% for each 90 days of early retirement (3.6% per year). For a full-career worker, this is equivalent to a decrement in the pension level (rather than the replacement rate) for early retirement of $3.6 / 64.5 = 5.6\%$. (This is the way in which most other countries calculate these adjustments.)

Until 2004, unemployed people could retire with a temporarily reduced pension up to 2 years before the normal pension age. The reduction was 1.3% for each 90 days (5.2% per year) of early retirement. An unreduced pension was paid on reaching the normal pension age. This was subject to 25 years' contributions and six months of unemployment.

Late retirement

It is possible to defer claiming the pension beyond the normal pension age. The total accrual factor (see section on early retirement above) is increased by 1.5% for each 90-day period of deferral (6% per year). There is no additional pension accrual for deferred retirement. It is also possible to combine pension receipt while continuing to work.

Social security contributions for workers

Contributions for pensions currently total 28% of gross earnings. Most of this (21.5 percentage points) is paid by employers, with the remaining 6.5 percentage points paid by employees. Employers must also contribute to funds for active labour-market policy and for sickness benefits. In 2005, the pension contribution was raised by 2 percentage points, but this increase was offset by a reduction in contributions to active labour-market policy funds. There are no ceilings on earnings subject to pension or other social contributions.

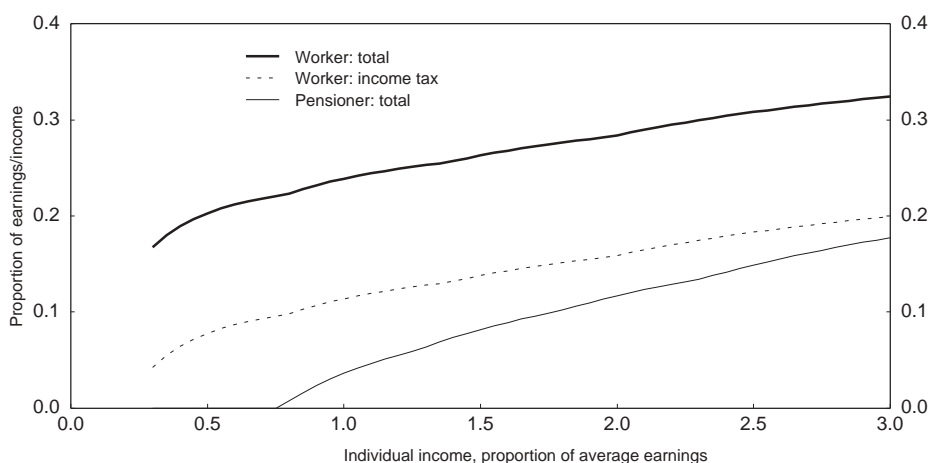
Personal income tax for pensioners

Old-age pensions are not taxed up to a value of CZK 162 000 per year. The standard tax-free allowance is CZK 38 040, giving pensioners an effective allowance four times higher than workers have.

Only part of the pension above the tax-free allowance is taxed by the rules for income from work. The tax rates vary from 15 to 32 %. Recipients of pensions do not pay social security contributions from their pensions, but they pay social security contributions for income from work.

The impact of these aspects of tax and social-security for pensions are illustrated in the figure below. For example, a worker on average earnings is liable for 11.4% of earnings in income tax and 12.5% in social security contributions. A retiree with pension income at the same level would pay just 3.6% in income tax and nothing in social security contributions.

Figure A1. Taxes paid by pensioners and workers by income



Source: OECD, Pension models.

Tax support for third-pillar pensions

Voluntary contributions to private pensions are supported by a combination of matching subsidies and tax exemption. The matching subsidy ranges from CZK 600 per year for a contribution of CZK 1 200 to a maximum of CZK 1 800 for contributions of CZK 6 000 and above. Contributions above CZK 6 000 are deductible under the personal income tax, subject to a maximum deduction of CZK 12 000. In combination, contribution matches and tax exemption mean that the state supports the first CZK 18 000 of private-pension savings, which is equivalent to about 8% of average earnings.

Voluntary contributions paid by the employer are exempt from income tax up to 5% of gross earnings. Employers can count these contributions as expenses up to a limit of 3% of the employee's gross pay.

Pension payments are taxed differently depending on whether they derive from employee's contributions, matching state contributions, investment returns or employer's contributions. Interest income is taxed at of 15% while the employer contribution is subject to standard income tax.

In private-sector pension products which allow lump-sum withdrawals, returns are taxed as in pensions. In addition, also the share of the withdrawal attributable to employer contributions is subject to 15% tax.

In the case of surrenders, the state subsidy is returned to the state, returns of investments and contributions of employers are taxed at 25%.

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