Extending pension coverage: Tax versus non-tax incentives

Daňové a nedaňové stimuly zvyšování účasti na penzijním spoření

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Abstract
This paper compares the design, cost and effectiveness of three voluntary approaches for increasing pension coverage. The first facilitates plan features designed to attract workers. The second provides tax and other financial incentives. The third mandates autoenrollment of workers with opt out. The non-tax incentives of plan features in the United States have had little effect on increasing coverage. Generous tax incentives in Germany and Czechia have raised coverage but are costly. Mandatory autoenrollment with opt out in the United Kingdom has achieved the highest coverage rate of the three approaches.

Keywords
pension coverage, automatic enrollment, tax incentives

JEL Codes
J26, D14, H24, H31

Abstrakt
Příspěvek porovnává konstrukci, náklady a efektivnost tří dobrovolných způsobů zvyšování účasti pracovníků na penzijním spoření. Prvním způsobem je rozšiřování produktové palety v zájmu podchycení pracovníků. Druhým způsobem je poskytování daňových a jiných finančních stimulů. Třetím způsobem je kombinace auto-enrolmentu s opt-outem, kdy pracovník je automaticky začleněn do systému, s možností odejít. První způsob měl a má malý vliv na zvyšování účasti na penzijním spoření v USA. Štědré daňové stimuly zvýšily zapojení zaměstnanců v Německu a Česku, jsou ale nákladné. Povinný auto-enrolment s možným opt-outem ve Velké Británii dosáhl nejvyšší míry zapojení pracovníků ze všech tří způsobů.

Klíčová slova
penzijní spoření, automatické zapojení do systému, daňové stimuly

Introduction

A number of countries with voluntary pension systems have taken steps to try to increase the coverage of workers. The policy justification for this government intervention is based on a failure of rational economics, with many workers not saving sufficiently for retirement without government intervention. The different approaches rely to varying degrees on rational responses of workers; thus, permitting an investigation of whether pension policy based on behavioral economics is more effective than policy based on rational economics. The three approaches we consider for increasing pension coverage rates are voluntary for workers. Some contain other mandates, such as mandating employers offer a plan. One approach, based on rational responses to plan features, involves adding features to pension plans to make them more desirable to workers. A second approach, based on rational responses to incentives, increases tax and other financial incentives to increase the direct financial advantage to workers of participating. A third approach, based on behavioral economics, mandates automatic enrollment of workers with opt out.

As background, the paper considers the justification for government policy to raise pension coverage rates and some conceptual and terminological issues. The following three sections consider the three different policy options. First, the paper considers the use of non-tax incentives, taking Individual Retirement Accounts in the United States as an example. Second, the following section considers tax incentives, examining policies in Germany and Czechia, which have generous tax incentives. Using the official short names for countries, the Czech Republic (official long name) is called Czechia (official short name), which since 2016 is the officially preferred name (Czechia 2017). The final section considers mandatory autoenrollment with opt out in the United Kingdom. Other approaches are also briefly considered.

While extending pension coverage is the focus of the paper, the level of pension contributions to defined contribution plans, and the level of pension accumulations, are also policy goals we consider. More difficult to assess, but also more closely related to the ultimate policy goal of raising savings for retirement, is the effect of pensions on net savings. Increases in pension savings may be offset by decreases in nonpension savings (Chetty et al. 2014) and increases in credit card debt (Beshears et al. 2017) and mortgage debt.

1 The justification for government policy

Considering why government policy is needed to encourage workers to save for retirement may provide insight as to the types of government policy most likely to be effective. In the traditional life-cycle model, individuals save while working in order to pay for consumption in retirement. This model with rational expectations as to future retirement income needs and rational savings behavior to meet those needs provides no justification (or need) for government policy to encourage savings in pensions.

Public policy, however, has long recognized individuals have difficulty saving adequately for retirement. The model of rational expectations relating to retirement income and needs

and rational behavior in response does not work for many people. This recognition provides the justification for government intervention through mandatory social security programs.

Explained in more detail below, the three approaches we consider to public policy to encourage pension savings implicitly are based on three different hypotheses, based on differing degrees of rationality, as to why retirement savings are inadequate. The first approach argues the latent demand is there, but existing pension options are not sufficiently attractive. The second approach argues people may have difficulty in saving for retirement, but they can be encouraged to do so through financial incentives. The third approach argues inertia and lack of knowledge can prevent some workers from taking the actions they know are appropriate to prepare financially for retirement, but these forces can be overcome through automatic enrollment with opt out. Other people may have myopia and have difficulty planning for retirement. Once enrolled, however, inertia would tend to keep people covered. These approaches are not mutually exclusive. This paper considers which approach or combination of approaches would be most effective.

2 Terminology and Concepts

Because policy analysts use different concepts to describe pension coverage, we start with a clarifying note on coverage concepts and terminology. The concept of pension coverage we use is a worker earning rights to a future pension benefit based on current employment (Turner, Muller and Verma 2003). By pension coverage in the context of a defined contribution contributions currently are being made. Thus, we are referring to workers who are contributing to a plan, or their employer is contributing for them. Workers who have a plan available to them but they or their employers are not contributing to it, are not considered as covered. Thus, workers who have a pension account with assets with their current employer but contributions are not currently being made to the account are not considered as covered. The essence of our concept of coverage in defined contribution plans is active participation through current contributions.

3 Non-tax incentives for pension coverage

We consider the case of Individual Retirement Accounts (IRAs) in the United States as an example of the use of non-tax incentives for expanding pension coverage.

IRAs. About half the U.S. private sector workforce, and about three-fourths of part-time workers, do not participate in an employer-provided pension plan (Munnell and Bleckman 2014). All workers not participating in an employer-provided pension plan, however, have the option to contribute to a tax-preferenced Individual Retirement Account (IRA) based on their current earnings, but few do.

U.S. pension policy to encourage direct contributions to IRAs has failed. The concept underlying the approach taken is the lack of coverage is primarily a supply-side problem

rather than a demand-side problem. More people would contribute to a pension, it is argued, if it were easier to do so or if the plans had desirable features. Government policy has attempted to encourage contributions by expanding the options concerning IRAs: SEP IRAs, SIMPLE IRAs, Roth IRAs, traditional IRAs and spousal IRAs. A SEP IRA is a Simplified Employee Pension Individual Retirement Arrangement. A SIMPLE IRA is a Savings Incentive Match Plan for Employees. These two types of IRAs were developed because policymakers felt employees would be more likely to save through an IRA provided in connection with a job because of the greater convenience of payroll deductions than to contribute on their own. Roth IRAs have nondeductible contributions but no tax on benefit receipts. Spousal IRAs are for non-working spouses when the other spouse is working. As another option, a person can purchase an Individual Retirement Annuity from a life insurance company.

To further encourage contributions to IRAs, low- and moderate-income workers can receive a Saver's Credit for contributions to IRAs. The Saver's Credit reduces the person's income tax liability for persons having an income tax liability. To facilitate contributions to IRAs, personal income tax filers can request part or all of their tax refund be sent directly to their IRA. To facilitate contributions for procrastinators, workers have up to their tax filing date or April 15 of the year following the tax year, whichever comes first, to make their previous year's contribution. Qualified Charitable Distributions of up to $100,000 annually can be made from an IRA by persons who are age 70 ½ or older. These charitable distributions reduce the person's income tax liability. IRAs can invest in U.S. gold coins, gold bullion and other precious metals, an option generally not allowed for other U.S. pension plans. Workers can take early withdrawals for first-time home purchase and for higher education expenses without paying the 10 percent early withdrawal penalty levied on withdrawals for other reasons (IRS 2014).

Despite all these features designed to make contributing to an IRA appealing to workers, almost all of the money flowing into IRAs is due to rollovers from 401(k) plans. Pension participants can roll over their 401(k) accounts to an IRA after they have left employment with the company sponsoring the 401(k) plan. In 2011, almost 13 times more money entered IRAs as rollovers than as contributions (Copeland 2013). In short, all these efforts to make IRAs desirable have had little effect on increasing direct contributions to IRAs, while rollover contributions are one of the most important flows in the U.S. retirement income system.

This situation raises the question as to why the advice on rollovers has been so effective, while all the other efforts through government policy have been so ineffective. These rollovers presumably are at least in part due to a massive advertising campaign by the financial services industry to "roll over your old 401(k)" (Turner and Klein 2014). Mutual fund companies have advertised extensively to encourage rollovers to IRAs, but they advertise relatively little to encourage direct contributions to IRAs.

Limitations of the Non-Financial Approach. The approaches may interact, with a limitation of the non-financial approach possibly being tied to a limitation of the tax incentive approach. Many U.S. workers not participating in a pension do not have a tax incentive to do so. About half of Americans pay no federal income tax in some years, with at least 40 percent paying no federal income tax in a typical year. Most households who

do not pay federal income taxes pay some other form of income or wage taxes, such as Social Security taxes and state and local government income taxes (Marr and Huang 2012), so they are not totally without a tax incentive.

Note: this paper follows the convention of using capital letters to refer to the Social Security program in the United States. We refer generally to government-sponsored old-age benefits programs as social security programs (lower case), rather than the terminology often used in international discussions of social insurance programs, public pension programs, or state pension programs.

The reason workers do not participate in defined contribution plans also may be related to the issue of non-participation in stock markets, which financial economists consider to be a puzzle (e.g., Campbell 2006). Vissing-Jørgensen (2013) has developed a model explaining non-participation in stock markets as being due in part to fixed costs of participation. Das, Kuhnen and Nagel (2017) suggest the non-participation in stock markets may also be due to negatively biased expectations as to future stock market returns by people with lower income and education, who are the groups with relatively low pension coverage rates. Because investing in the stock market is generally an aspect of participating in a defined contribution pension plan, these explanations as to stock market non-participation may also help explain low participation of low-income workers in defined contribution plans.

4 Tax incentives and fiscal subsidies for pension coverage

All countries with voluntary pension systems with substantial coverage provide tax incentives to encourage employers to offer pensions and workers to participate in them (Yoo and de Serres 2004). The idea is tax incentives will cause increased demand for pension coverage. Tax incentives, however, can be expensive to the government in terms of lost tax revenue. For example, tax preferences for retirement savings are one of the largest sources of tax expenditures (lost tax revenue) in the United States (Department of the Treasury 2016).

In voluntary pension systems, pension coverage rates tend to be low among low-income persons (Antolin 2008). Their low income makes it difficult for them to save, the progressivity in income tax rates provides them a relatively low incentive, and the progressivity in social security benefits in some countries provides higher replacement rates for low-income persons than for high-income persons.

Thus, policies to extend pension coverage in countries with voluntary pension systems generally need to focus on lower-income workers. For example, some proposals have favored replacing tax deductions and exemptions with tax credits, which are not tied to marginal tax rates, and thus not tied to the progressivity of the income tax system. They reduce taxes paid per credit equally for lower-income and higher-income tax payers, rather than reducing taxable income (Ghilarducci 2007). Tax credits may be more effective than tax deductions in extending pension coverage because they generally provide

a relatively larger incentive to low-income persons, who are the least likely to participate in a voluntary pension system. However, they only benefit low-income workers who pay income taxes.

Because of the lack of success in most countries of traditional tax incentives to produce high coverage rates, pension policy has turned to other financial incentives. For example, employers may provide matching contributions when workers voluntarily contribute to a pension plan, such as in 401(k) plans in the United States.

Against this background, Czechia has been able to achieve pension coverage rates of 60 percent in a voluntary pension system (OECD 2008). Germany has also achieved pension coverage rates above 50 percent. This paper later in this section analyzes what explains the success of the policies of these two countries.

This section focuses on tax policies to increase pension coverage rates. Two related topics not covered are whether these policies increase national savings rates and the equity of the distributional effects of the tax preferences, with a progressive income tax system causing them to be disproportionally more generous (relative to contributions) for high-income workers.

Tax Treatment of Pensions. Governments commonly provide tax incentives for pension coverage when pension coverage is voluntary. The tax incentives increase the rate of return on the pension savings of the participant, raising the rate of return on pension savings relative to other forms of savings. However, pension savings generally are less liquid before retirement than other forms of savings, which is a disadvantage. In some countries, such as the United Kingdom, pension savings are generally locked in until retirement, while in other countries, such as the United States, pension savings can be accessed before retirement, but with a tax penalty for early withdrawal.

A common form of tax treatment of pensions is known as EET, where contributions of workers and employers are exempt from taxation (E) (i.e., reduce taxable income), investment earnings are exempt from taxation during the accumulation phase (E), and benefits and withdrawals are taxed (T) when received. For example, Germany uses that approach (Whitehouse 2005).

Previous Studies of Pension Coverage and Taxation. Providing historical perspective, Dailey and Turner (1992), in an early international study of pension coverage rates for the private sector, find pension coverage rates for employer-provided pensions of 42 percent for West Germany (1987), 29 percent for the United Kingdom (1987), and 46 percent for the United States (1988). In none of the six countries studied with voluntary pension systems did the coverage rate exceed 50 percent. More recently, Antolin (2008) calculates pension coverage rates in selected OECD countries. He finds coverage rates for the entire workforce, including coverage by personal pensions, such as IRAs, and coverage of public sector workers, of 57.7 percent for the United States (in 2005) and 67.9 percent in Germany (2004). Reagan and Turner (2000) study the effect of variations in marginal income tax rates across states in the United States on pension coverage rates, finding a positive effect of higher marginal tax rates. A related study on voluntary take up of health insurance

in the United States, finds even if 90 percent of health insurance costs were subsidized, 25 percent of those lower-income persons eligible for subsidies would choose to remain uncovered (Finkelstein, Hendren and Shepard 2017).

Previous international studies of pension taxation include Whitehouse (2005) and Yoo and de Serres (2004). These studies focus on the structure of the tax incentives and not on their effects. Some effects of taxation in Germany on pension scheme participation are examined by Börsch-Supan (2004) and Kuper and Schmidt (2016).

Germany. This section considers pension tax policy in Germany because it has succeeded in raising the pension coverage rate above 50 percent. Starting in 2001, to offset cuts in its social security benefits, Germany has provided generous tax incentives for voluntary private pensions, called Riester pensions. The subsidies were increased in 2004, 2006 and 2008 (Pfarr and Schneider 2013).

Incentives. Riester Plans must provide a guarantee of principal, which is a guarantee of a zero nominal rate of return, or, in other words, a money back guarantee. The nominal value of the principal is guaranteed, but its real value can be eroded by inflation if the rate of return is less than the inflation rate.

Individuals can contribute up to 4 percent of their gross annual earnings. If they contribute the full 4 percent they receive a subsidy from the government (basic grant) of €154, plus €185 for every child born before 2008 and €300 for every child born in 2008 or later, or a tax refund, whichever is greater. Initially, at least 70 percent of the accumulated account at retirement had to be received as an annuity or phased payment, but up to 30 percent can be received as a lump sum payment at retirement (Kluth 2013). In 2014, the (partial) mandatory annuitization was abolished. One distribution option is to have a phased withdrawal with an annuity starting at age 85. Annuities starting at advanced ages, such as 85, are sometimes called longevity insurance annuities.

Tax Treatment. The income tax regime for Riester pensions is EET in the context of a progressive income tax schedule. For low-income workers and families with children, because of the German system of a general lump-sum tax exemption and family-related tax exemptions, the deduction of pension savings would not bring significant tax reductions. To make the Riester pension attractive for low-income earners and families with children, lump-sum payments to subsidize the Riester pension (basic grant plus grant per child) are provided.

Because low-income households and households with children are assumed to have the most difficulty saving for retirement, the tax incentives for the Riester pensions are most generous for these households (Börsch-Supan et al. 2013). People eligible to receive subsidies include not only workers paying social security contributions, but also spouses of those workers, unemployed persons and recipients of child-rearing benefits.

With the Riester pension, the combination of the government subsidy and the worker's contribution must be at least 4 percent of the worker's yearly gross income to be eligible for a subsidy. The higher the subsidy, the lower the required contribution by the

individual. The subsidy for each additional child reduces the required level of the personal contribution down to the lower limit of €60 a year (Pfarr and Schneider 2013).

The government subsidy has three components. After the basic grant, the second component, based on the number of children in the household, is a flat amount per child per year contributed by the government into the person's account. The third component is the tax deductibility of the worker's contribution, which was raised considerably between 2002 and 2008, but since then has been held constant in nominal terms, so it erodes in real value over time.

The tax incentives to contribute to a Riester pension increase with the number of children in the family. Pfarr and Schneider (2013) find the tax incentives are effective: people with more children are more likely to sign up for a Riester pension. However, the incentives to encourage lower-income people to contribute are not effective, according to their study. A study by Kuper and Schmidt (2016), however, shows decisions about saving in Riester plans were driven mainly by price effects (tax margins) and not by other socioeconomic characteristics (i.e. number of children).

The value of the tax subsidy relative to the contribution averages 45 percent, but ranges from 24 percent to 90 percent, depending on income level and number of children. The subsidy is slightly U shaped by income, with low-income persons receiving a relatively high subsidy due to the matching contribution and high-income persons receiving a relatively high subsidy due to the progressivity of the income tax, with them having higher marginal tax rates (Börsch-Supan et al. 2013).

Coverage. Of the 30 million eligible Germans, by early 2005 only 4.2 million had signed up for a Riester pension, or one in seven, despite generous tax subsidies. Explanations for the disappointing take-up include burdensome regulations and the money-back guarantee increasing the cost of providing benefits and reducing rates of return. In 2005, a reform simplified the application procedure, causing the demand to increase (Pfarr and Schneider 2013).

In 2006, Riester pensions overtook occupational pensions as the main source of non-government pensions. At the end of 2009, about 40 percent of households potentially eligible for a Riester pension had at least one Riester pension. Largely as a result of the increase in Riester pensions, the percentage of households with pension coverage increased from 27 percent in 2001 to 55 percent in 2009 (Börsch-Supan et al. 2013).

Cost of incentives. In 2010, Riester pensions cost the government €3.5 billion, of which about 80 percent was due to the direct subsidies and the remainder was due to foregone income tax revenue (Börsch-Supan et al. 2013). Thus, a large percentage of the cost to the government for these plans is for subsidies beyond those made in traditional systems of tax treatment of pensions.

Czechia. The Czech old-age pension system was thoroughly reformed in the 1990´s. Czechia (the Czech Republic) was the first country in Central and Eastern European to introduce a strong personal pensions pillar. The private pension funds, legislated and

introduced in 1994, were different from the standard employer-sponsored, autonomous pension funds. But employers were allowed to start their own pension funds as corporate entities, and they were allowed to contribute to the personal accounts of their employees in any pension fund.

The original product, regulated by the law on supplementary pension insurance with state contribution and certified by the authorities (departments of two ministries), was a life insurance product that could have been administered by life insurance companies, but the former state monopoly insurer had an almost monopoly position in the market and that is why a new type of provider had to be legislated. (In Germany the main providers of Riester pensions are insurance companies.)

The original product was designed as universal life insurance: the participant had an account with the pension fund provider. All funds had to provide lifetime annuities, but in practice participants had no interest in purchasing them. The individual retirement accounts functioned like simple bank savings accounts, accumulating CZK (Czech Korunas – Czech crowns, in English), including the state contributions. The providers invested the funds almost exclusively in Czech government bonds. At least 90 percent of the yearly investment earnings of the fund was required to be credited to the participant accounts as a yield. The participants paid no regular fees, other than through the reduction in the rate of return received. The products were distributed mainly through new sales networks.

In Czechia, the peak number of personal savings contracts was attained in 2012: the number of participants, including retirees with personal savings contracts, was 5 percent higher than the number of economically active people. The 2013 reform of the personal pension scheme closed the successful products called supplementary pension insurance. These vehicles were changed into "transformed" funds, and new supplementary pension savings schemes (participating funds with investment risk borne by the participants) managed by newly legislated pension fund companies were created (Batty and Hailichova 2012). No investment guarantees are provided, but financial institutions are required to offer a conservative fund, while funds with other risk profiles may also be offered. The total number of contracts has decreased since 2013. Roughly 22–23 percent of personal savings contracts are sponsored by employers (APFCR 2017).

Incentives, The state's matching contributions to the pension accounts are progressive. Initially, participants with the minimum monthly contribution of CZK 100 received state contributions of CZK 50 monthly in the first two years of their participation, then CZK 40 (1 CZK = US$0.047). Participants with the maximum contribution of CZK 500 received state contributions of CZK 150 (US$7.05) monthly in the first 2 years, then CZK 120. Starting in 2000, these state contributions were unified to the higher levels of the first two years. The participants matching contributions from the state ranged from a 50 percent state match (to their contribution of CZK 100 a month) to a 30 percent match (to their contribution of CZK 500 a month). Employer contributions were matched in the same way. The employer contributions originally could not be deducted for the purpose of determining the corporate income tax.

With the major 2013 reform of the personal pensions pillar, a sales argument was lost: the option to withdraw 50 percent of the account after 15 years of contributions. The same reform raised the (subsidy-effective) minimum participant contribution to CZK 300 monthly and the maximum to CZK 1,000. Those amounts were thus indexed to inflation and income growth. But the matching contribution rates from 2013 are lower: 23–30 percent instead of the former 30–50 percent.

Since 2017, the limit of contributions deductible from a worker's income tax base increased from CZK 12,000 to CZK 24,000 for employee's contributions and from CZK 30,000 to CZK 50,000 for employer's contributions.

Tax Treatment. Fiscal incentives provided for Czech private pensions consist of up to three main parts: 1) employee and/or employer's contribution deducted from the employee's tax base up to a limit (employer's limit is twice as high as the employee's), 2) state matching contribution, and 3) annuity benefits not being subject to income tax (Rutecka-Góra 2016). (Employer contributions are not required.) This system in the case of annuities operates as an EEE tax regime for an average employee (Rutecka-Góra 2016). The Czech standard case, with no annuitization, has two different tax regimes: ETE for the employer contributions and CTE (or ETE+matching contribution) for employee contributions. The capital income tax T is postponed and deducted at the payout phase.

In OECD countries, the level of exemptions relative to benchmark savings (usually a bank account) varies considerably, with Czechia being at the high end, with exemptions equaling 40 percent of contributions in 2004 (Yoo and de Serres 2004). In 2017, these exemptions equaled 65 percent of employer contributions.

Coverage. The Czech supplementary pension system has a coverage rate of about 60 percent (Molek 2014). Its highest coverage rate of 80 percent occurred in 2012, prior to the major reform closing the successful supplementary pension insurance funds. In 2013, these vehicles were changed into transformed funds and new supplementary pension savings schemes (participating funds) managed by pension fund companies were created (Batty and Hailichova 2012).

Despite high coverage rates, the Czech pension system has a major shortcoming. An average contribution amounts to about 2 percent of the average gross wage. Limited maximum tax deductions and state subsidies have led people with middle incomes to save mostly only up to the sum offering them a full state subsidy and tax relief – their motivation was not primarily their old-age security but tax optimization. Lower-income participants were acquired by financial advisers, but with low contributions, many of them have not raised their contribution to the new higher minimum level of CZK 300 monthly. As a result, high coverage coincides with low assets under management. Most participants' pension accounts are not large enough to guarantee adequate supplementary pension benefits in the future. That situation may change in the future due to higher limits for employee's and employer's contributions. These contributions increased slightly in the years 2013–2016 (Ministry of Finance of the Czech Republic 2017).

Starting in 2013, the new products of the supplementary pension system in Czechia have failed to attract relatively young participants who may benefit the most from state support and (prospective) compound interest rate – 57 percent of participants in the new participating funds are aged 60+ (Ministry of Finance of the Czech Republic 2016). That weak popularity among workers cannot be improved by employers' contributions because those contributions are paid only to a limited number of participants (about 20 percent of all third pillar accounts). But the employer's contribution is often paid for participants aged 35–39 (76.5 percent of all participants with employers' contributions), which means it serves as a useful motivating factor of employment policy (Ministry of Finance of the Czech Republic 2017).

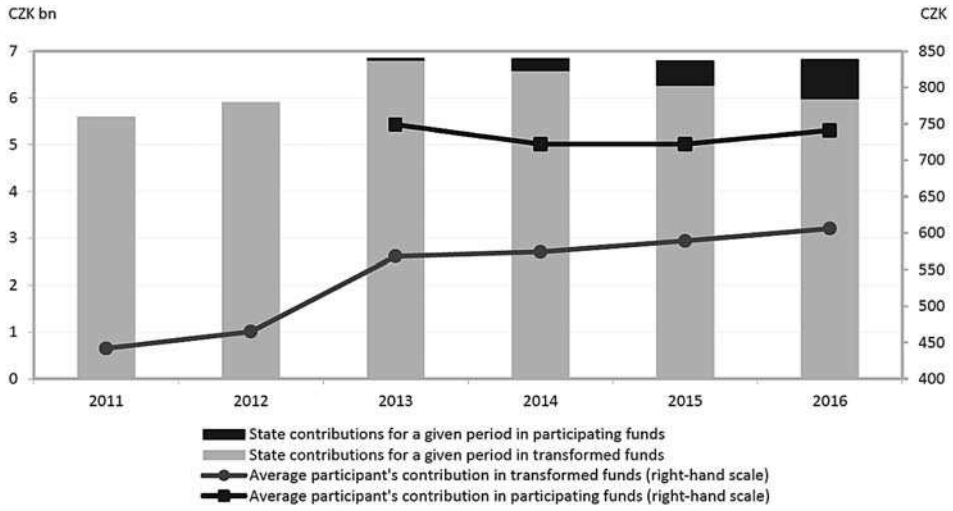
Since 2016, minors (under age 18) may have accounts in supplementary pension schemes which may increase coverage among the youngest age groups of workers in the future. In the first year, 12 thousand parents opened pension plans for their children (Ministry of Finance of the Czech Republic 2017).

Cost of Incentives. Czechia has the pension system with the highest tax incentives in the world (40 percent of the total contribution) according to Whitehouse (2006). Since 2013, these incentives for participants were reduced but the contribution limits were extended for the middle class. The substantial increase of the limit for tax-free employer contributions starting in 2017 might influence the future role of the individual retirement accounts. The tax-expenditure costs of the employer contributions are 65 percent.

The cost of fiscal incentives depends on the coverage rate, limits on the level of the state matching contribution (state subsidy), the amount of contributions paid by employees and employers, and marginal income tax rates. Before the reform of 2013 changed the system of state subsidies, 50 percent of pillar III participants received the maximum amount of state contribution. That resulted in a CZK 5.5–6 billion cost for the state budget in the years 2010–2012. Since 2013, the total amount of state contributions increased to about CZK 6.9 billion due to higher minimum limits of contribution although the relative amount of the subsidy was reduced (to 19–23 percent of total contribution). Only 30 percent of the transformed funds' participants and 46 percent of participating funds' members benefited from the maximum state subsidy (Ministry of Finance of the Czech Republic 2017).

The amount of state contributions/subsidies is regularly published (Figure 1). The tax expenditures are only assessed, the official estimates are rarely published. Our estimate of tax reliefs for 2015 is CZK 6.3 billion for personal contributions and CZK 5.2 billion for employer contributions. Together with the state contributions of CZK 6.6 billion, the total fiscal costs were approximately CZK 18.1 billion. This amount represents 41.2 percent of personal and employer contributions.

Figure 1: State contributions and average participant's contribution in transformed and participating funds



Source: Ministry of Finance of the Czech Republic (2017)

5 Autoenrollment with opt out

In traditional rational economics, default options are not expected to affect peoples' choices because those options do not affect the relative prices and qualities of the choices, and thus do not affect either supply or demand. However, behavioral economics has shown at least in part because of inertia, default options can affect peoples' outcomes, with inertia causing some people to remain in the default even though they might not have actively chosen the default. When workers face fixed costs of participating in a voluntary pension system, which include the costs of obtaining information relevant for participation and investment choices, autoenrollment may be able to overcome the barrier of the fixed costs. Thus, autoenrollment is based in part on the theory of sufficient latent demand for pension coverage, but fixed costs, lack of knowledge about investing, and inertia may prevent workers from acting on that demand. In addition, some people who otherwise would not be interested in pension coverage may continue in coverage once they are automatically enrolled due to inertia, or perhaps, once covered they feel like it is the right thing to do.

The traditional default relating to pension coverage in voluntary pension systems is for the worker to not be enrolled, with the worker needing to take some action to enroll. With autoenrollment and opt out, the default is reversed, so the worker is automatically enrolled, with the worker needing to take some action to not be enrolled. Thaler and Sunstein (2009) have called this approach a nudge.

In part because of a lack of policy developments at the national level, a number of proposals in the United States have called for auto IRAs initiated by state governments. With an auto IRA, an employer would be required to offer an IRA with automatic enrollment and automatic payroll deductions, but workers could opt out. Generally, employer contributions would not be required. So far California, Connecticut, Illinois, Maryland and Oregon have passed legislation enabling them to establish auto IRA programs. A recent survey of employees in firms with five to 250 employees finds 25 percent were unsure whether they would continue to participate in such a program if they were automatically enrolled, which suggests at least 75 percent might participate (Pew 2017). In addition, as another recent development, Ireland has announced it will implement an automatic enrollment program with opt out starting in 2020.

United Kingdom. In October 2012, the United Kingdom launched a new program designed to expand pension coverage while maintaining a minimum level of contributions (Turner and Brown 2016). The program is being phased in, and by February 2018 all employers are required to offer retirement plans meeting minimum requirements, and automatically enroll their employees, and contribute to those plans. This requirement even applies to employers with a single employee, including household employers. It does not apply to the self-employed. All employers who choose to not sponsor a pension plan meeting the minimum requirements concerning employer and employee contributions are required to enroll their employees in the National Employment Savings Trust (NEST), which is a government-sponsored plan. Once enrolled in a plan, employees have the option to withdraw from the plan (opt out).

Coverage. As a result of this program, the pension coverage rate in the private sector has risen from 42 percent in 2012 to 70 percent in 2015. Among workers with low earnings (between £10,000 and £20,000 a year), the pension coverage rate rose from 35 percent to 65 percent. With this program, the coverage rate for women in the private sector (70 percent) is basically the same as for men (69 percent), with women having overcome a 3 percentage point gap as a result of autoenrollment (Department for Work & Pensions 2016). More recent data indicates due to the further roll out of autoenrollment the coverage rate rose to 78 percent in 2016 (The Pensions Regulator 2017).

Employers must enroll their workers within three months of the workers becoming eligible, but workers can then opt out at any time. The initial results concerning opting out suggest the program has succeeded in retaining participants due to automatic enrollment. The overall opt out rate is 9 percent (Department for Work and Pensions 2017).

Opt out rates vary considerably by age, with 23 percent of participants over the age of 50 opting out, versus 7 percent of those under the age of 30, and 9 percent of those ages 30 to 49. Part-time workers are 8 percentage points more likely to opt out than full-time workers – 18 percent opt out for part-time versus 10 percent for full-time. Women were slightly more likely to opt out than men (14 percent versus 12 percent) (Department of Work & Pensions 2014). A more recent study found opt out rates of 28 percent for those age 60 or older, compared to five percent for those younger than age 30 (NEST 2015). Opt out rates may increase in the future because the required contribution rate has not fully

phased in. In 2017, the required employee part of the contributions was 0.8 percent, rising to 4 percent in 2019.

Workers who opt out but are still in the labor force will be automatically reenrolled in three years. While predicting future behavior in this area involves a high degree of uncertainty, 41 percent of those who opted out in 2014 said they would definitely or probably stay in the system when automatically reenrolled in three years (NEST 2015).

6 Other policies to raise coverage

An alternative way to provide incentives for pension coverage is for the government to make matching contributions (Palacios and Robalino 2009). Matching contributions are a common feature of 401(k) plans in the United States, where the matching contributions are provided by employers. Matching contributions, depending on the match rate, can provide a larger financial incentive than tax preferences, particularly for lower-income workers who have low or zero marginal tax rates.

Mandates are another way of raising pension coverage. Mandates of pension coverage take different forms. Sweden has taken the approach of mandating individual account plans. The Netherlands has taken the approach of quasi-mandatory pensions, through industry-wide agreements between employers and workers.

While not itself a policy to raise coverage, low replacement rates from social security tend to lead to higher pension coverage rates. For example, social security replacement rates from pay-as-you-go social security for full career workers who are high-income workers (workers earning at least twice the average wage) is less than 40 percent in Czechia. However, for low-income workers (earning less than half the average wage), they are higher than 93 percent in Czechia, and for all workers in Germany, they are about 60 percent (Antolin 2008).

Conclusions

This paper compares different policies for increasing pension coverage in voluntary pension systems. The policy justification for this government intervention is based on a failure of rational economics, with many workers not saving sufficiently for retirement without government intervention. The different approaches rely to varying degrees on rational responses of workers, permitting an investigation of whether public policy based on behavioral economics is more effective than policy based on rational economics.

The paper compares non-tax incentives for raising pension coverage to tax incentives and autoenrollment. Autoenrollment policy is based on behavioral economics. The paper examines non-tax incentives for participating in Individual Retirement Accounts in the United States. Non-tax incentives are features designed to increase coverage by making a pension plan appealing, thus presumably raising the demand by workers for pension

coverage. It examines tax policy in countries with high coverage rates for voluntary pension plans – Germany and Czechia. It examines autoenrollment with opt out in the United Kingdom. That approach is similar to the auto IRA approach being discussed in some states in the United States, and being established in Ireland in 2020. While relatively few countries with voluntary pension systems have coverage rates above 50 percent, the countries considered here have succeeded in achieving higher coverage rates. However, the tax and other fiscal incentives are costly. By contrast, the non-tax incentives in the United States have been largely ineffective in raising contributions to Individual Retirement Accounts.

The successful approaches all have features targeting low-income workers, either through government subsidies or through the autoenrollment mandate. Based on the experience so far in the United Kingdom, its program of autoenrollment with opt out appears to be highly successful in raising pension coverage rates while also setting standards for minimum contributions, suggesting behavioral approaches, in combination with traditional approaches, may be more successful than traditional, rational approaches alone.

Lastly, while raising pension coverage rates is an important goal, it is not the only goal relating to providing adequate pensions. The level of contributions, the amount of pension assets workers accumulate at retirement, and the ability of workers to convert those assets to lifetime income are also important goals.

References

APFCR (2017) Komentář Asociace penzijních společností České republiky k vybraným obchodním a ekonomickým výsledkům trhu za 2. čtvrtletí 2017. Available at: http://www.apfcr.cz/wp-content/uploads/2017/08/Komentář-2Q-2017.pdf

ANTOLIN, P. (2008) Coverage of Funded Pension Plans. *OECD Working Papers on Insurance and Private Pensions*, No. 19. Available at: http://www.oecd.org/finance/private-pensions/41122606.pdf

BATTY, I. and H. HAILICHOVA (2012) Major Pension Fund Reform in the Czech Republic: Creating a Three-Pillar System. *Pensions: An International Journal*, Volume 17, Issue 4, pp. 225–228, doi:10.1057/pm.2012.25

BESHEARS, J., J. J. CHOI, D. LAIBSON, B.C. MADRIAN and W.L. SKINNYHORN (2017) *Borrowing to Save? Unintended Consequences of Automatic Enrollment*. Unpublished paper.

BÖRSCH-SUPAN, A. (2004) Mind the Gap: The Effectiveness of Incentives to Boost Retirement Saving in Europe. *OECD Economic Studies*, No. 39, 2004/2. Available at: http://www.oecd.org/eco/growth/35664007.pdf

BÖRSCH-SUPAN, A., COPPOLA A., M. and REIL-HELD A. (2013) Riester Pensions in Germany: Design, Dynamics, Targeting Success, and Crowding-in. In *Matching Contributions for Pensions*, edited by Richard Hinz, Robert Holzmann, David Tuesta and Noriyuki Takayama. Washington, DC: The World Bank, pp. 81–102.

BÖRSCH-SUPAN, AXEL; TABEA BUCHER-KOENEN, NICHOLAS GOLL and CHRISTINA MAIER. (2016) *15 Jahre Riester – eine Bilanz*. Munich: Munich Center for the Economics of Aging (MEA) and Max-Planck-Institut für Sozialrecht und Sozialpolitik. Available at: https://www.sachverstaendigenrat-wirtschaft.de/fileadmin/dateiablage/gutachten/jg201617/arbeitspapiere/arbeitspapier_12_2016.pdf

CAMPBELL, J. Y. (2006) Household Finance. *Journal of Finance* 61 (4), 1553–1604.

CHETTY, R., J. N. FRIEDMAN, S. LETH-PETERSEN, T. H. NIELSEN and T. OLSEN (2014) Active vs. passive decisions and crowd-out in retirement savings accounts: Evidence from Denmark. *Quarterly Journal of Economics* 129(3): 1141–1219.

COPELAND, C. (2013) Individual Retirement Account Balances, Contributions, and Rollovers, 2011: The EBRI IRA Database. *EBRI Issue Brief*, No. 386, May. Available at: http://www.ebri.org/pdf/EBRI_IB_05–13.No386.IRAs.pdf

CZECHIA. (2017) *Czechia: The Name of the Czech Republic*. Available at: http://www.czechia-initiative.com/czechia_name.html

DAILEY, L. M. AND J. A. TURNER (1992) Private Pension Coverage in Nine Countries. *Monthly Labor Review* 115 (May): 40–43.

DAS, S., C. M. KUHNEN AND S. NAGEL (2017) *Socioeconomic Status and Macroeconomic Expectations*. Unpublished paper.

DEPARTMENT OF THE TREASURY (2016) *Tax Expenditures*. Available at: https://www.treasury.gov/resource-center/tax-policy/Documents/Tax-Expenditures-FY2016.pdf

DEPARTMENT FOR WORK AND PENSIONS (2014) *Automatic Enrolment Opt Out rates: Findings from Qualitative Research with Employers Staging in 2014*. London, UK.

DEPARTMENT FOR WORK AND PENSIONS (2016) *Automatic Enrollment Evaluation Report. December*. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/576227/automatic-enrolment-evaluation-report-2016.pdf

DEPARTMENT FOR WORK AND PENSIONS (2017) *Automatic Enrolment Review 2017: Analytical Report. December*. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/668657/automatic-enrolment-review-2017-analytical-report.pdf

FINKELSTEIN, A., N. HENDREN and M. SHEPARD (2017) Subsidizing Health Insurance for Low-Income Adults: Evidence from Massachusetts. *NBER Working Paper* No. 23688.

GHILARDUCCI, T. (2007) *Guaranteed Retirement Accounts: Toward Retirement Security. Economic Policy Institute, November 20*. Available at: http://www.gpn.org/bp204.html

INTERNAL REVENUE SERVICE (IRS) (2014) *Traditional IRAs*. Available at: http://www.irs.gov/publications/p590/ch01.html#en_US_2013_publink1000295917

KUPER, S. and T.-P. SCHMIDT (2016) Effects of Tax-Based Saving Incentives on Contribution Behavior: Lessons from the Introduction of the Riester Scheme in Germany. *Modern Economy* 7, 1198–1222.

MARR, C. and C-C. HUANG (2012) *Misconceptions and Realities about Who Pays Taxes*. Center on Budget and Policy Priorities, September 17. Available at: http://www.cbpp.org/cms/?fa=view&id=3505

MINISTRY OF FINANCE OF THE CZECH REPUBLIC (2016) *Report on Financial Markets Development in 2015*. Available at: http://www.mfcr.cz/en/statistics/financial-market-analyses/report-on-financial-market-developments-25540

MINISTRY OF FINANCE OF THE CZECH REPUBLIC (2017) *Report on Financial Markets Development in 2016*. Available at: http://www.mfcr.cz/en/statistics/financial-market-analyses/report-on-financial-market-developments-29103.

MOLEK, J. (2014) Development of the State-Contributory Supplementary Pension Insurance in the Czech Republic. *Kontakt*, Volume 16, Issue 3. Available at: http://dx.doi.org/10.1016/j.kontakt.2014.06.001

MUNNELL, A.H. and D. BLECKMAN (2014) Is Pension Coverage a Problem in the Private Sector? *Issue In Brief* 14-7, Center for Retirement Research at Boston College.

NATIONAL EMPLOYMENT SAVINGS TRUST (NEST) (2015) *NEST Insight 2015: Taking the Temperature of Auto Enrolment*. Available at: https://www.nestpensions.org.uk/schemeweb/NestWeb/includes/public/docs/nest-insight-2015,pdf.pdf.

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD) (2008) The Czech Republic. In *OECD Private Pensions Outlook 2008*. Available at: http://www.oecd.org/finance/private-pensions/42565663.pdf

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD) (2016a). *OECD Pension Outlook 2016*, OECD Publishing, Paris. Available at: http://www.keepeek.com/Digital-Asset-Management/oecd/finance-and-investment/oecd-pensions-outlook-2016_pens_outlook-2016-en#page1

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD) (2016b) OECD *Tax Database*. Available at: http://www.oecd.org/tax/tax-policy/tax-database.htm#pir

PALACIOS, R. T and D. A. ROBALINO (2009) Matching Defined Contributions: A Way to Increase Pension Coverage. In *Closing the Coverage Gap*, edited by Robert Holzmann, David A. Robalino, and Noriyuki Takayama. Washington, DC: The World Bank, pp. 187–202.

PEW CHARITABLE TRUSTS (2017) *Worker Reactions to State-Sponsored Auto-IRA Programs*. Available at: http://www.pewtrusts.org/en/research-and-analysis/reports/2017/10/worker-reactions-to-state-sponsored-auto-ira-programs

PFARR, C. and U. SCHNEIDER (2013) Choosing Between Subsidized or Unsubsidized Private Pension Schemes: Evidence from German Panel Data. *Journal of Pension Economics & Finance* 12(1): 62–91.

REAGAN, P. and J. A. TURNER (2000) Did the Decline in Marginal Tax Rates During the 1980s Reduce Pension Coverage? In Steven Woodbury and William Alpert (eds.), *Employee Benefits and Labor Markets in Canada and the United States*, pp. 475–496.

RUTECKA-GÓRA, J. (2016) Evolution of Supplementary Old-age Pension Systems in Selected CEE Countries. *Journal of Management and Finance*. No. 4, December, pp. 149–162.

THE PENSIONS REGULATOR (2017) *Automatic Enrolment. Commentary and Analysis: April 2016 – March 2017*. Available at: http://www.thepensionsregulator.gov.uk/docs/automatic-enrolment-commentary-analysis-2017.pdf

THALER, R. H. and C. R. SUNSTEIN (2009) *Nudge*. Penguin Group.

TURNER, J. A. and J. E. BROWN (2016) *The United Kingdom's New Retirement Savings Program*. Issue Brief. National Institute on Retirement Security. Available at: http://www.nirsonline.org/index.php?option=com_content&task=view&id=952&Itemid=49

TURNER, J. A. and B. W. KLEIN (2014) Retirement Savings Flows and Financial Advice: Should You Roll Over Your 401(k) Plan? *Benefits Quarterly* 30: Fourth Quarter, pp. 42–54.

TURNER, J. A., L. A. MULLER and S. VERMA (2003) Defining Participation in Defined Contribution Pension Plans. *Monthly Labor Review* (August): 36–43. Available at: https://www.bls.gov/opub/mlr/2003/08/art3full.pdf

U.S. GOVERNMENT ACCOUNTABILITY OFFICE (GAO) (2011) 401(k) Plans: Improved Regulation Could Protect Participants from Conflicts of Interest. *GAO-11-119*, January 28. Available at: http://www.gao.gov/new.items/d11119.pdf

VISSING-JØRGENSEN, A. (2003) Perspectives on Behavioral Finance: Does Irrationality Disappear with Wealth? Evidence from Expectations and Actions. *NBER Macroeconomics Annual*, 2003, 18, 139–208.

VOSTATEK, J. (1996) *Sociální a soukromé pojištění (Social and Private Insurance)*. Prague: Codex Bohemia. 602 pp.

VOSTATEK, J. (2013) *Taxing and Subsidizing Pensions*. Conference Proceedings, 11th International Scientific Conference "Economic Policy in the European Union Member Countries", 18–20 September 2013, Velke Karlovice.

VOSTATEK, J. (2016) *Penzijni teorie a politika (Pension Theory and Policy)*. Prague: C. H. Beck. 367 pp.

VOSTATEK, J. (2017) Czech Public and Occupational Pension Schemes and Reforms. *ACTA VSFS*, vol. 11, No. 1, pp. 61–92.

WHITEHOUSE, E. (2005) Taxation: The Tax Treatment of Funded Pensions. *World Bank Pension Reform Primer Series*. World Bank, Washington, DC. Available at: https://openknowledge.worldbank.org/handle/10986/11211

YOO, K-Y. and A. DE SERRES (2004) Tax Treatment of Private Pension Savings in OECD Countries. *OECD Economic Studies* 39(2): 73–110. Available at: http://www.oecd.org/eco/public-finance/35663569.pdf

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