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Annuitisation: Retirement Income That Lasts a Lifetime

An insurance solution to people outliving their retirement savings

June 2018

The Geneva Association

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Ronald Klein, Director, Global Ageing research programme

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The Geneva Association—International Association for the Study of Insurance Economics
Talstrasse 70, CH-8001 Zurich
Email: secretariat@genevaassociation.org | Tel: +41 44 200 49 00 | Fax: +41 44 200 49 99

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Published by The Geneva Association—International Association for the Study of Insurance Economics, Zurich.

Contents

Acknowledgements

We would like to thank the members of The Geneva Association's Global Ageing Working Group for their insight, expertise and support in preparing this paper: Naomi Bazak (Manulife Financial); Marie-Neige Couriaut (AXA); Yanela Frias (Prudential Financial); Hiroki Hayashi (Nippon Life Insurance); Noriyoshi Hosokawa (Dai-ichi Life); Richard Jackson (Global Aging Institute); Stefan Kroepfl (Zurich Insurance); Mike Mansfield (AEGON); Jessica Mosher (OECD); Christoph Nabholz (Swiss Re); Alf Neumann (Allianz); Bryan Pickel (Prudential Financial); Achim Regenauer (Partner Re); Cord-Roland Rinke (Hannover Re); Fred Tavan (Sun Life Financial).

Foreword

It is extremely demotivating for the population of a country to watch the elderly lapse into poverty. For this reason, as the economy of a country develops, programmes that mitigate old-age poverty become increasingly important. Different cultures and political environments cause countries to adopt different social insurance and pension programmes and different pension legislation. High on the list of these programmes are government-provided social retirement plans, known as Pillar I; incentives for increased savings into occupational pension plans or Pillar II; and personal savings with tax-deferred benefits, called Pillar III.

With people living longer and fertility rates declining, there is extreme pressure on most Pillar I programmes, causing a reduction in benefits, an increase in contributions, or both. As a consequence, the focus is shifting towards Pillar II pension plans.

This paper provides a case study of the Pillar II programmes for three developed markets: the U.S., the U.K. and Switzerland. The goal is to explore what works well and what does not work well in markets using different approaches. It is clear that there is no one-size-fits-all answer. Examining programmes from other countries is key to making the correct adjustments to any country's own Pillar II programme.

Nobel Prize-winning behavioural economist Richard Thaler said in his book entitled *Nudge: Improving Decisions About Health, Wealth, and Happiness:* "The combination of loss aversion with mindless choosing implies that if an option is designated as the 'default', it will attract a large market share. Default options thus act as powerful nudges."[1] This paper recommends that the default options for Pillar II programmes should be based upon three broad principles: automatic enrolment, automatic escalation of contributions with age and working duration, and some level of mandatory annuitisation. The automatic or 'opt-out' nature of these recommendations becomes the 'powerful nudge' that Thaler describes in his book. There should also be some level of flexibility in all programmes to allow for extreme situations. However, the message is clear: individuals in all countries have to be better prepared for retirement and, increasingly, they need to take on this task themselves.

Saving earlier, at a higher rate, and continuing to increase contributions with age and higher salaries helps to secure a large enough Pillar II pension to fund retirement. Purchasing a lifetime annuity with all or part of the retiree's Pillar II pension account is one method to ensure that an individual will not outlive his or her retirement funds. Governments play a key role in enacting legislation to achieve these recommendations.

Anna Maria D'Hulster
Secretary General
The Geneva Association

1 Thaler, R. H. and Sustein, C. R. (2009) 'Nudge: Improving Decisions About Health, Wealth, and Happiness', ISBN: 978-1-101-65509-2, Penguin Books.

Executive summary

Not so long ago, employees of many companies in most industrialised nations enjoyed the security of a Pillar II occupational retirement programme that paid monthly benefits for life. These monthly installments were determined by length of service, age and salary and, for the most part, were fully funded by the employer.

Since the monthly benefits are determined at retirement, these plans are called defined benefit plans and they are becoming extinct. Taking their place are savings plans where the employer and employee make a specific contribution each period to a fund assigned to that employee. These plans are appropriately named defined contribution plans and have become the norm for Pillar II occupational pensions in developed countries.

As assets grow in these savings plans, employees are left with a very difficult decision: what to do with this fund at retirement. Low interest rates in combination with increasing life expectancy have made this decision even more difficult. A lifetime annuity may not seem like a good investment.

What was once decided in advance in the form of a defined benefit plan has now become a major life decision at retirement for the employee. But the average employee may not be equipped to make such a difficult and complicated decision. On the one hand, the employee earned the money and should be able to decide how to spend it; on the other hand, the government offers incentives to employees and employers to contribute to these plans, thereby giving governments some say in how the money is utilised.

The reasons for this major change in retirement benefits is clear. Companies were increasingly concerned about longevity risk and investment risk. Passing these risks back to the employees seemed like a good solution. In addition, asking employees to make a contribution reduced the expense for the employer.

Many economists will argue that a reduction in corporate expenses will somehow find its way back into the pockets of the employees. Even if one believes this, the transfer of risk to the employee is irrefutable. Investment risk alone is enough to confuse many employees, and adding longevity risk makes the switch to defined contribution plans far too onerous for the average employee to handle.

The change was made without any financial education being offered—there was no actuarial information about life expectancy, no investment education on funds and no insurance information about how annuities work. Purchasing a lifetime annuity at retirement would pass these risks to an insurance company, but it is difficult for the retiree to make this decision without proper financial education.

This paper presents a case study of Pillar II occupational pension plans in three countries—the U.S., the U.K. and Switzerland. Of these three countries, Switzerland clearly has the best system with automatic enrolment into occupational pension plans, automatic escalation of contributions as the employee grows older, and automatic annuitisation. The employee may have the ability to opt out under certain conditions, but behavioural economists teach us that opt-out plans are much more effective than opt-in plans, and Switzerland obviously took this into account when designing its regulations for Pillar II benefits.[1]

Of the three countries, the U.S. clearly has the worst system as retirement funds are totally accessible at age 59½, and no annuitisation option is available. However, the U.S. seems to be moving in the right direction with a series of enacted and proposed legislations to allow in-plan annuitisation of Pillar II occupational pension benefits.

The U.K. had a mandatory annuitisation feature in its regulations, but recently changed this with the Freedom and Choice in Pensions Act of 2015 to look more like the U.S. system. Now, pensioners are free to withdraw their entire pension pots in a lump sum at age 55. There are some positive elements of the current system—automatic enrolment, and free and impartial professional guidance for people aged 50 and over to assist them in how to best withdraw their benefits. While the automatic enrolment feature is quite positive in that statistics show an increase in the number of people enrolled, employees who are automatically enrolled are placed directly in the minimum contribution category. Statistics also show that the contribution rate has on average decreased.

Low interest rates are a major factor for the effectiveness of occupational retirement plans. When rates are low, purchasing lifetime income becomes a difficult decision. With the combination of increased life expectancy, low fertility rates and low interest rates, Pillar I retirement systems will be severely stressed in years to come. It is incumbent upon individuals to personally save more for retirement through Pillar II and III plans and make the correct decisions once they reach retirement age. Having well-designed corporate Pillar II pension schemes can go a long way towards reaching this goal. It is vital that all government programmes encourage and reward good behaviour. Finally, it is time for education systems around the world to begin teaching financial literacy in schools. Only then will more individuals have the proper knowledge to make prudent decisions regarding their retirement.

Part 1: The U.S. system

Defined benefit plans

In May 1980, Robin Morris graduated from college with a degree in mathematics at the age of 21. Coming from a small town in the Midwest of the U.S., she had always dreamed of finding a good job with a large company in New York City. Robin sent out hundreds of professionally printed résumés and received an offer from a large insurance company in downtown New York City for a job in the accounting area, which she immediately accepted.

During her orientation, the company described the generous benefits package offered to its employees. As was then typical for U.S. companies, a large portion of her medical insurance was covered by her new employer. Robin would only have to choose from a few options. She also received a description of the vacation policy, the subsidised lunch programme, the company store and the free life insurance programme.

Finally, the orientation leader described the defined benefit pension plan offered by the company. This plan required no contributions from the employee. For all employees over the age of 21 the plan would accrue 1.75 per cent for the first 20 years of service, 1.25 per cent for the next 20 years of service and 0.25 per cent per year for any additional years of service. These percentages would be summed up and then multiplied by the final 5-year average salary that Robin would earn at the company. The resulting USD amount would be paid each year as a monthly lifetime annuity. Full vesting would be achieved after the employee had been in the programme for seven years.

As a mathematics major, Robin considered herself quite knowledgeable about financially related topics. She knew a bit about investments too. However, this pension plan information package used completely new terminology: vesting, final average salary and accrual percentages per year of service. Retirement was a long way off, and there were no decisions for her to make. Robin heard that this insurance company took good care of its employees, so why be concerned?

What Robin did not know was that behind the scenes, her new employer was taking a tremendous risk on Robin. If she worked at the company for 44 years until she retired at age 65, (something not totally unheard of in the 1980s), she would accrue 61 per cent of the average of her last five years' worth of salary as an annual pension paid until her death. The company bore the investment risk and longevity risk. It also accepted the risk that Robin's salary might increase substantially during those 44 years. Of course, these risks were partially offset by other employees who would not remain with the company long enough to accrue a meaningful percentage multiplier for their defined benefit retirement plan.

Luckily, Robin did not have to worry about this or to understand the amount of funds that the company would have to set aside each year on her behalf. The company never disclosed the amount held, nor would this data ever become available to her. The only information that Robin received once every year was an overall pension funding statement and a statement showing how much she would receive at normal retirement age, based on her current salary. Both pieces of annual information were totally useless to her and were discarded immediately.

Defined contribution plans

Fast forward just 20 years and most U.S. companies have switched from defined benefit pension plans to defined contribution plans (see Figure 1), mainly 401k plans, named after the section of the U.S. Tax Code describing this programme. When companies began this transition, many employees viewed it as a positive development. Now employees would be able to actually see their pension balances at any time and would have full access to the monies at age 59½, whereas before, the entire process was a black box. In addition, employees could make investment choices within certain parameters.

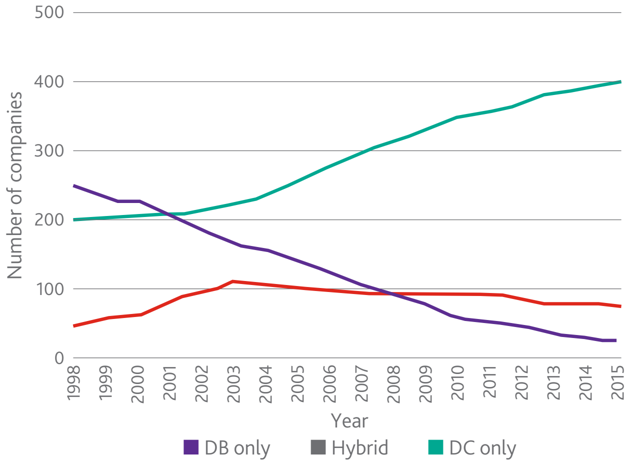
Of course, if the employees could have seen the funds being held on their behalf in their old defined benefit plans that required absolutely no contribution on their part, there would have been a revolt against the change. There are obviously some advantages to defined contribution plans: the funds are held on behalf of the individual employee instead of being lumped together as pension assets for all employees; there is less credit risk to the employee as default by the employer could cause some reduction in defined benefit plan payouts[2]; defined contribution plans are typically offered to a

2 The Pension Benefit Guaranty Corporation (PBGC) mitigates most of this risk by managing failed pension plans with a combination of the failed plan assets and premiums it collects from all pension plans.

greater proportion of employees than defined benefit plans ever were; the transparency of fund accumulation might in some cases encourage the employee to save more; the funds are completely portable (the assets can be transferred tax-free to another employer if the employee changes companies, or into an Individual Retirement Account); and the employee has the ability to change investments, within broad parameters, to better suit his or her individual needs. However, the companies have in fact reduced their contributions to pensions and shifted longevity and investment risk to employees, all the while selling this as an enhanced benefit.

Figure 1: Pension plans of Fortune 500 companies

DB: defined benefit / DC: defined contribution



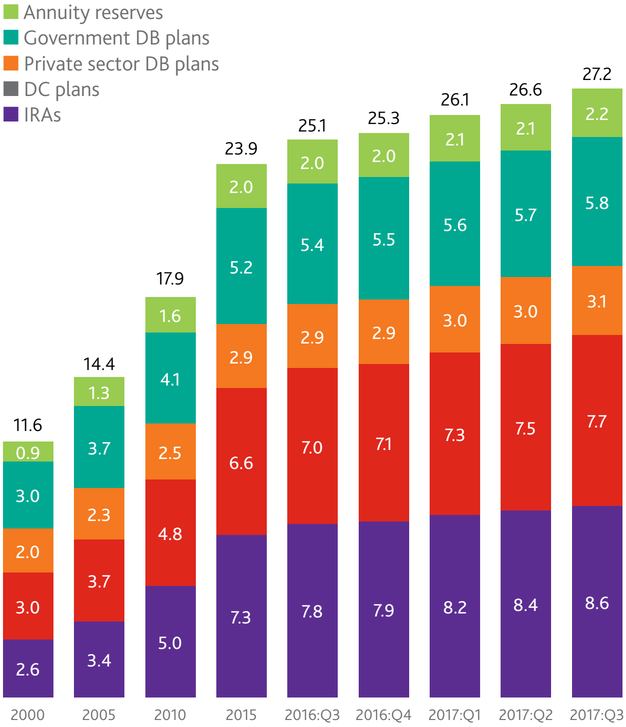
Source: Willis Towers Watson, A Continuing Shift in Retirement Offerings in the Fortune 500 Companies, 2016.

The changes in pension plans occurred without any additional financial training for employees. There was no education on longevity risk and what 'life expectancy' actually means; there was no education about the value of an annuity; and there was little education about which funds to invest in. How could employees suddenly handle this additional risk without knowing how much to save or when or how to begin drawing down assets?

According to the Investment Company Institute (ICI), there were USD 27.2 trillion in retirement assets in the U.S. at the end of the third quarter of 2017.[3] That is 35 per cent of all household assets. USD 16.3 trillion or just about 60 per cent of these assets are estimated to be held in defined contribution plans (401k and similar plans) and Individual Retirement Accounts (IRAs). Although both of these vehicles are tax-deferred retirement savings plans, neither includes annuitisation options as part of the plan. Participants of these plans are basically on their own when it comes to ensuring that the assets last for the full period of their retirement.

Figure 2: U.S. total retirement market

Trillions of dollars, end of period, selected periods
DB: defined benefit / DC: defined contribution
IRA: Individual Retirement Account



Source: ICI, 2017. [3]

Defined benefit vs defined contribution plans

It is very difficult to assess the effectiveness of defined contribution pension plans versus defined benefit pension plans in the U.S. While old-age poverty rates could give some indication, as yet there are not enough retirees who contributed only to defined contribution pension plans for

3 ICI Investment Company Institute (2017), https://www.ici.org/research/stats/retirement/

their entire working careers to perform the analysis. This is because Regulation 401k was enacted in 1978, and the popularity of these plans took off in the late 1980s and early 1990s. In addition, poverty rates are a problematic measurement since they are not only affected by pension benefits but also by private savings, inheritances, real estate and many other sources of income. Finally, drawing down defined contribution plan monies at too high a rate can actually reduce old-age poverty rates in the short term, only to increase poverty in the long term.

One way of getting an indication as to what will occur is to look at the amount needed to guarantee a retiree an annual pension equal to 60 per cent (the generally accepted target retirement income goal) of their final 5-year average salary and equate this to the savings in the average person's 401k account. While there are many assumptions to be made, this will at least give an indication of the direction in which retirees in the U.S. are headed with defined contribution pension plans versus defined benefit plans. Please note that while 60 per cent of salary is the target for retirement income, even retirees with defined benefit plans struggle to attain this level of income unless, like Robin, they remain with the same employer for most or all of their working careers.

According to the U.S. Census Bureau, the mean income of 60- to 64-year-olds in the U.S. is about USD 50,000.[4] Therefore, we can use this figure for our estimate of a 5-year average salary. Next, we need to calculate an average annuity factor for a 65-year-old. Looking to the Centers for Disease Control and Prevention (CDC) 2013 mortality statistics for all Americans, the present value of a standard life annuity can easily be calculated at varying interest rates. Multiplying these present values by 60 per cent of the average 5-year-average salary, or USD 30,000, would yield the amount a person would need to save to assure income equal to 60 per cent of their 5-year average salary.

Figure 3: Average and median income by age range

Source: U.S. Census Bureau, Current Population Survey, 2016.

4 The Motley Fool (2017), https://www.fool.com/retirement/2017/01/02/americans-average-income-by-age-how-do-you-compare.aspx

The following is a table of the results:

Table 1: Savings required to ensure USD 30,000 per year for life

Interest rate				
1%	3%	5%	7%	12%
$501,371	$405,894	$336,460	$284,649	$201,210

As the interest rate increases, the amount needed in savings decreases since the funds will earn a higher rate of interest between payments. Assuming that Robin earned the average of USD 50,000 per year, she may have seen one of these figures quoted as the amount that her company put aside for her retirement at age 65—if her company actually provided these figures for individuals.

The next step is to look at average 401k savings for 65-year-olds. According to Vanguard, the average 401k savings for that age group is about USD 200,000.[5] Remember that a large part of the USD 200,000 was accumulated due to employee funding whereas the numbers in Table 1 were typically provided 100 per cent by the employer.

Table 2: 401k savings balances by age group

Age group	Average 401k balance in USD	Median 401k balance in USD
Under 25	4,154	1,325
25-34	22,256	8,192
35-44	61,631	23,491
45-54	116,699	43,467
55-64	178,963	66,643
65 and older	196,907	60,724

Source: Vanguard, 2017. [5]

Table 2 shows that the average 65-year-old has accumulated about USD 200,000 in 401k savings. Therefore, at a 3 per cent interest rate, Robin would actually have accumulated more than twice as much retirement money under the average defined benefit plan than under the average defined contribution plan. Again, this does not take into account the fact that Robin most likely contributed about half of her 401k savings account monies herself.

It would take an assumed interest rate of 12 per cent for these figures to be approximately equal, not taking into account employee contributions. It is mind-boggling that the switch from defined benefit plans to defined contribution plans was 'sold' to the American corporate world as an enhanced benefit, while all the time employers were passing risk to the employee.

But averages do not always tell the whole story as there are some high-income earners that skew the averages. The median income for ages 60 to 64, seen in Figure 3, is only USD 32,000, and the median 401k savings for 65-year-olds is a little more than USD 60,000. The same analysis yields the following results for the median salary:

Table 3 : Savings required to ensure USD 19,200 per year for life

Interest rate					
1%	3%	5%	7%	12%	29.5%
$320,878	$259,772	$215,334	$182,175	$128,774	$60,456

For median salaries and 401k savings, the results are even more dramatic. In fact, the required savings to equal the defined benefit plan is more than four times the median 401k savings at a 3 per cent interest rate. Interest rates would have to be about 29.5 per cent for the value of these two benefits to be equal, not considering employee contributions!

It must be noted that Robin is an extreme example in that she remained with her first employer for her entire career. Employees who changed companies would receive much lower defined benefit plan payouts from the first employer, although they would begin to accrue benefits from future employment. Using 60 per cent of final average salary tells the story at one end of the spectrum. There are other factors that can also be disputed in this analysis, most notably that many people with 401k plans who are near retirement may also have defined benefit plans. However, it is 100 per cent clear that companies made this switch to reduce expenses and, more

5 Vanguard (2017) How America Saves, https://pressroom.vanguard.com/nonindexed/How-America-Saves-2017.pdf, p. 45.

importantly, to reduce risk.[6] Economists will argue that a reduction in costs for employers will find its way back into the pockets of employees through the increase in other benefits or higher wages. Even if this were true, the risk once borne by the employer now rests squarely on the shoulders of the employee.

Even considering the above factors, it is clear that the switch from defined benefit plans to defined contribution plans will result in a decrease of retirement income for many, if not most, workers. This is due to several reasons, for example: defined contribution assets can be withdrawn in a lump sum; most defined contribution plans are still voluntary; and defined contribution assets are not, on average, at the same level as would be needed to equal the defined benefit pension plan payouts.

Individuals are simply not keeping pace with the level of contributions that companies were making on their employees' behalf. Corporations passed longevity and investment risk to employees with very little regulation as to what the employee should do with the money once it becomes available. In fact, there is a slight conflict of interest for the government in that the more money that is withdrawn from savings plans, the more tax revenue the U.S. Government will receive. This passes the risk of old-age poverty to future generations.

A possible solution

With less savings and no need to annuitise these monies at retirement, a larger percentage of people will be at risk of becoming poverty-stricken in their old age. According to the Government Accountability Office Report GA-2016-433, 8.7 per cent of people between the ages of 65 and 74 were living below the individual poverty line of USD 11,367 in 2015, increasing to 11.7 per cent for people over 75.[7] While poverty figures are always a little deceiving in that they only take income into account, the relationship between those aged 65 to 74 and those over 75 is not surprising. And drawdowns of defined contribution plan assets will only widen the gap. Retirees with defined benefit plans without indexation for inflation (that is, where monthly payments do not increase with inflation) will also add to the problem of higher poverty rates with time.

Living just above the poverty line is not the answer either. In fact, many social programmes cut off above the poverty level. For example, eligibility for Medicaid (a health insurance plan for the poor) ends at 138 per cent of the poverty level.

A possible solution would be to require annuitisation of tax-qualified defined contribution plan assets up to the point that an individual's income would remain above a multiple of the poverty level, for example 200 per cent. This is not a new concept: Switzerland employs a similar model.[8] The theory is that the government allows individuals to save for retirement on a tax-deferred basis, and therefore the government should be able to insist that the money is used for retirement purposes. It is difficult to think of a better way to ensure this than to require all or a portion of the money be converted into a lifetime income—with the goal of making sure that the person is above the national poverty line.

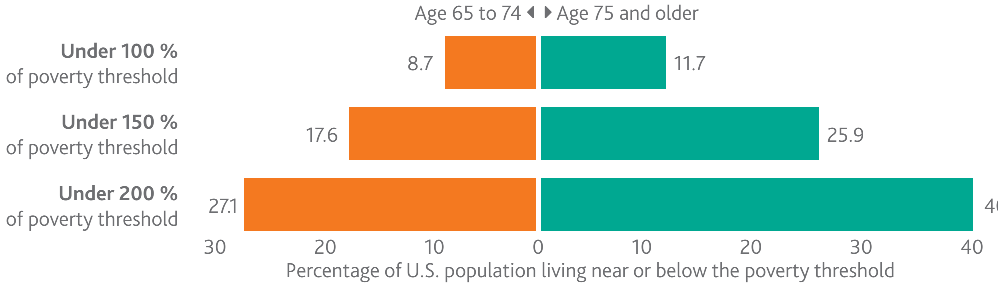
Such a requirement may not be difficult to enact as there is no option to take Pillar I benefits (called Social Security benefits in the U.S.) as a lump sum instead of monthly payments. If individuals can prove that they have a lifetime income, including Social Security payments, that exceeds 200 per cent of the poverty level, they can receive payouts from defined contribution plans and individual savings plans in whatever way they wish. However, if their lifetime income is lower than 200 per cent of the poverty level, some or all of their defined contribution plan assets are required to be converted into a lifetime income.

6 Shea, R. C., Newman, R.S, Woolston, W.H. and Johnson, K.C. (2012) 'Re-Imagining the Pension Plan: Sharing Risk to Achieve Efficient, Sustainable Retirement Security', NYU Review of Employee Benefits, http://www.cov.com/files/Publication/99e6f47b-9b2f-4795-a31b-11319c54c51f/Presentation/PublicationAttachment/c7b9a009-b295-49fb-aaa6-848e061c9207/Re-Imagining_%20the_Pension_Plan.pdf

7 U.S. Census Bureau (2017), www.census.gov: poverty level for an individual aged 65 and over.

8 The Swiss Pillar II regulation has default annuitisation although 25 per cent of the account may be withdrawn as a lump sum and pension funds may allow up to 100 per cent to be withdrawn as a lump sum, assuming the spouse consents. De minimis Pillar II accounts must be allowed to be withdrawn as a lump sum.

Figure 4: Ageing Americans' income relative to the poverty threshold



Source: U.S. Census Bureau, Current Population Survey, 2017.[7]

Financial literacy is key

Any attempt to require annuitisation of defined contribution assets should be backed up by a financial literacy programme that begins in the basic education system and continues into the work environment. If people are to make the correct retirement choices it is critical that they understand how savings plans work, what investment choices are best in certain situations, and that they know that an annuity is not an investment but insurance against them living beyond their life expectancy, especially as this is the case for approximately 50 per cent of retirees.

In addition to the requirement that some or all defined contribution plan funds be annuitised, there could be an automatic annuitisation requirement: if the retiree does not make a decision, annuitisation is the default option. The best rate offered by providers chosen by the employer could be the default annuity option, perhaps calculated with minimum government-set assumptions. Employees would only be able to opt out of the annuity if they could prove that total lifetime income is above 200 per cent of the poverty level.

It must be emphasised that it is relatively new for people to retire with defined contribution plans instead of defined benefit plans. While regulations allowing tax-deferred savings plans were created with the best of intentions, these regulations did not fully take into account the difficult decisions retirees need to make. And employers were also left in a difficult situation caused by the 1974 Employee Retirement Income Security Act (ERISA): even if employers did want to offer a lifetime annuity option within the corporate 401k plan, under ERISA the employer has a fiduciary responsibility to the employee. Therefore, if the employer recommended an annuity provider, and the provider failed to pay annuity benefits to the employee due to insolvency, for example, the employer could become liable for giving poor advice. Employers simply did not want to take this risk as the U.S. is a very litigious country, ranking fifth in the world.[9]

In 2008, the Department of Labor (DOL) created a 'safe harbour' rule easing the ERISA fiduciary requirement, but employers interpreted the safe harbour as too stringent since they still had to ensure that the annuity provider was 'appropriate'. Additional enhancements were made in 2012, making it easier and cheaper for retirees to purchase annuities with 401k savings.

In 2014, the DOL said that it would ease the safe harbour requirement even further but it has yet to do so. Easing the safe harbour to discharge the employer's obligation once an annuity is purchased is the step that employers are waiting for. In an October 2017 report from the U.S. Department of the Treasury entitled *A Financial System That Creates Economic Opportunities—Asset Management and Insurance*, the Treasury and DOL recommend that an independent fiduciary be certified to assess the financial strength of annuity providers. This would transfer the responsibility from employers to this newly certified fiduciary.

9 Clements Worldwide, The Most Litigious Countries in the World, https://www.clements.com/resources/articles/The-Most-Litigious-Countries-in-the-World

Part 2: The U.K. system

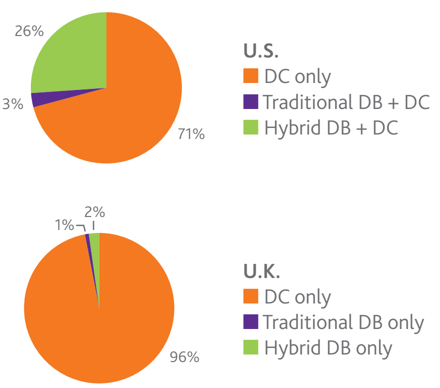
Opt-out versus opt-in programmes

To be clear, the U.S. is moving in the right direction by attempting to enact legislation to make 'in-plan' annuitisation possible. It is interesting that the U.K. seems to be moving in the completely opposite direction.

Graduating from a U.K. University in 1980, Robin would have found herself in a very similar set of circumstances to those in the U.S. Most larger employers in the U.K. were offering defined benefit pension plans that required no decisions on the part of their employees. During the past 20 years, U.K. employers also transitioned, albeit at a much quicker pace (see Figure 5 below), into offering defined contribution plans—with two major differences to the U.S. plans.

Figure 5: 2015 Retirement plan types provided to newly hired salaried employees*

DC: defined contribution / DB: defined benefit



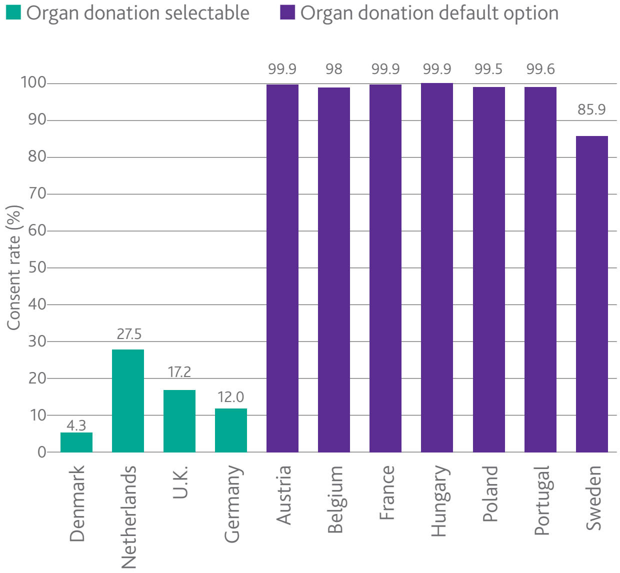
**Numbers may not sum 100% due to rounding.*

Sources: Willis Towers Watson, FTSE DC survey, 2015; Fortune 100 survey, 2016.

First, U.K. plans have been phasing in a mandated auto-enrolment feature since 2012. Auto-enrolment means that if employees do not specifically opt out of the plan, they are enrolled by default. There have been many studies on the psychology of opt-in versus opt-out decisions including a particularly revealing study performed by Johnson and Goldstein in 2004[10] in which rates of organ donation on death by automotive accident varied dramatically by country.

Johnson and Goldstein showed that although certain countries had very similar cultures, the option rates for organ donation after an automotive accident varied dramatically (see Figure 6) depending on whether a country had organ donation as the default option (purple countries) or as a selectable option (green countries). Some might say that this is simply because people do not care or do not want to be bothered to check a box. In fact, Johnson and Goldstein conclude that decisions, such as organ donation after death, are quite emotional, and having the 'support' of one of the choices as the default assists in decision making.

Figure 6: Organ donation consent rates, online experiment, by default



Source: Johnson and Goldstein, 2004.[10]

Effect of automatic enrolment on U.K. pension plans

Clearly, the auto-enrolment regulation in the U.K. will increase the number of people contributing to pension funds. While it is still early, considering that auto-enrolment did not take effect for some companies until

10 Johnson, E. J. and Goldstein, D. G. (2004) Defaults and Donation Decisions, Transplantation 78(4): 1713-1716.

February 2018, a 2017 analytical report by the Department for Work and Pensions[11] shows that participation in defined contribution pension plans increased from 10.7 million participants in 2012 to 16.2 million participants by the end of 2016. This is consistent with Johnson and Goldstein's analysis. While many companies in the U.S. have adopted auto-enrolment into 401k plans, making this mandatory would certainly increase participation, as it has done in the U.K.

One issue with the U.K. auto-enrolment rule is that the default option places employees in the minimum contribution category. Looking at employee and employer contribution percentages, it is evident that auto-enrolment increased the number of participants (see Table 4) but that the level of contributions dropped dramatically for employers since 2012 (see Table 5). In total, however, combined employee and employer contributions have increased due to a dramatic increase in participation.[12]

Table 4: Percentages of eligible employees with workplace pensions: by banded rate of employee contribution in the private sector, 2010 to 2016, Great Britain

Banded contribution rate	2010	2011	2012	2013	2014	2015	2016
Zero	17.3	17.9	17.9	12.6	9.2	7.1	7.7
0-2%	5.0	5.0	4.7	9.6	29.9	37.1	38.8
2-3%	10.4	10.0	10.2	10.4	9.0	8.8	8.8
3-4%	11.8	12.4	11.7	11.7	10.1	9.1	9.3
4-5%	12.7	12.2	12.2	11.7	9.6	8.8	8.7
5-6%	12.8	12.8	12.7	13.1	9.8	9.2	8.2
6-7%	15.8	16.0	11.1	10.1	7.1	6.4	5.3
7 and over	14.2	13.6	19.5	20.7	15.3	13.4	13.4

Source: Department for Work and Pensions estimates derived from the ONE ASHE, GB, 2010-2016.[11]

Table 5: Percentages of eligible employees with workplace pensions: by banded rate of employer contribution in the private sector, 2010 to 2016, Great Britain

Banded contribution rate	2010	2011	2012	2013	2014	2015	2016
Zero	4.7	3.8	3.5	3.3	2.3	1.8	1.6
0-2%	2.8	2.7	2.6	6.9	26.6	33.3	34.9
2-4%	10.9	10.9	11.2	11.9	11.9	12.3	12.9
4-6%	16.5	16.0	15.5	15.6	12.9	12.0	12.5
6-8%	11.1	11.6	11.6	11.9	9.4	8.4	8.5
8-10%	8.9	9.4	10.5	9.4	7.1	6.3	6.0
10-15%	21.1	23.2	23.9	21.5	15.8	14.5	10.6
15+ %	24.0	22.5	21.2	19.6	13.9	11.4	13.1

Source: Department for Work and Pensions estimates derived from the ONE ASHE, GB, 2010-2016.[11]

11 Department for Work and Pensions (2017) Automatic Enrolment Review Report, ISBN 978-1-78659-003-9, December.

12 Department for Work and Pensions (2017) Official Statistics: Workplace Pension Participation and Saving Trends: 2006 to 2016, https://www.gov.uk/government/statistics/workplace-pension-participation-and-saving-trends-2006-to-2016, Table 2.1.

The minimum contribution rate has already increased from 1 per cent for both employers and employees to 3 per cent for employers and 2 per cent for employees. In 2019, these minimum contribution rates are due to increase again to 5 per cent and 3 per cent for employers and employees respectively. The rates will then remain at this level. Many reformers are asking for automatic escalation of contribution percentages, which would increase the contribution rate as participants grow older—unless they opt out of the escalations.

The second major difference is that prior to pension freedoms, many U.K. plans had a default in-plan annuity option. In-plan annuitisation allowed 25 per cent of the pension's funds to be withdrawn as a lump sum tax-free, and before pension freedoms were introduced, the remainder was typically directed into a lifetime annuity administered by the pension scheme company. The employee was informed of the option to purchase an annuity from another insurer, but 60 per cent of participants simply defaulted to the annuity option within the pension plan.[13] Again, this shows the power of a default option. Some in-plan annuity insurers were believed to have made their annuities less than competitive. One of the critical factors in enacting Freedom and Choice in Pensions was non-competitive annuity offers.[14] It should be noted that smaller pension pots and a portion of larger pots could be taken as a lump sum under certain circumstances. Also, certain wealthier individuals were able to access their pots as drawdowns. However, approximately 90 per cent of pension pots were annuitised in 2013.[15] Therefore, this paper focuses only on the portion of pension pots that were required to be annuitised.

The Freedom and Choice in Pensions Act became effective in April 2015 and gave participants of defined contribution pension plans the right to take all or some of their pension pots in a lump sum as early as the age of 55 (even earlier in certain circumstances), subject to paying normal income tax on the withdrawals. Suddenly, there was no requirement for U.K. residents to purchase lifetime income in the form of an annuity. This is very similar to the way 401k defined contribution pension plans currently work in the U.S.

There were many reasons cited for the enactment of this legislation, including low interest rates causing relatively poor prices for annuities, a U.K. cultural preference for passing some of the pension pot to heirs (which is not a feature of lifetime annuities), the government not wanting to be viewed as a 'nanny state' (mandating how people spend their own money), the belief that people would save more if they had access to the money, and lack of availability of impaired life annuities (higher monthly payouts due to shorter life expectancies). According to the U.K. tax law, only the first 25 per cent of pension pots may be withdrawn tax-free. After that, the tax rate on withdrawals is at normal income tax rates. "This undoubtedly helped to sell the policy to the Treasury!", according to Steve Webb, former Minister of Pensions[16].

Personal retirement assistance

One very positive rule that was part of pension freedoms was the requirement for free and impartial professional retirement guidance for defined contribution pension plan participants aged 50 and over. To be clear, this is general guidance from government workers on the options available. The next step is hiring an advisor for a fee. The early indications show that the use of advisors is directly proportional to the size of the pension pot, according to the Financial Conduct Authority's (FCA) Retirement Outcomes Review—Interim Report.[15]

13 Financial Conduct Authority (2014), Thematic Review of Annuities, TR14/2, February.
14 HM Treasury (2014), Freedom and Choice in Pensions, Cm8901, July.
15 Financial Conduct Authority (2017) Retirement Outcomes Review—Interim Report, MS16/1.2, July.
16 Webb, S. J. (2016) personal email, 05 August.

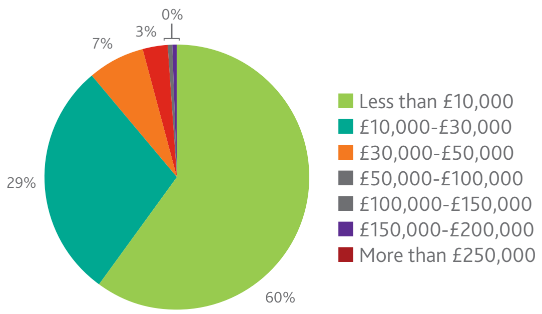
Figure 7: Proportion of advised and non-advised sales by pot size (all products), April 2015-April 2016

Note: Includes drawdown and annuities.

Source: Financial Conduct Authority analysis of distributional channels charges data collected from 55 providers, 2017.

While it might seem logical that the larger the pot, the more advice people will get, those with smaller pots may actually have a greater need of advice. Of the pension pots that were fully withdrawn, about 89 per cent had values of GBP 30,000 or less (see Figure 8). It would be interesting to see how many of the participants who withdrew their pots would have purchased an annuity or a drawdown product if they had they received advice.

Figure 8: Sizes of pots that were fully withdrawn after the pension freedoms, October 2015-September 2016



Note: Purchases of drawdown have increased and purchases of annuities have decreased.

Source: Financial Conduct Authority (FCA) analysis of FCA retirement income market data collected from 56 providers, 2017.

There are varying views on whether or not the newly enacted pension freedoms will be positive for U.K. participants. Some feel that these new freedoms will encourage more people to save. Those who did not want to 'tie up' money in annuities would certainly be reluctant to contribute additional monies into a pension scheme with mandated annuitisation. Steven Cameron, Public Affairs Director at Aegon (one of the largest life insurance companies in the world), agrees: "Our research findings offer some positive signs that some people are taking more interest and are saving more into pensions now that they have the freedoms to 'look forward to' from age 55."[17] Anything that encourages more savings is critical in the battle against inadequate retirement income.

In addition, it is difficult to dispute that the current extremely low interest rate environment causes worryingly low annuity values. A pensioner who purchases an annuity now will 'lock in' that low interest rate for his or her lifetime. Instead, one 60-year-old used his entire pension pot of GBP 46,000 to purchase a small dwelling and lease it out, according to the Financial Times.[18] He received GBP 6,000 per year in earnings as opposed to the GBP 1,000 that he would have earned from the pension fund.

17 Cameron, S. (2017) personal email to Ronald Klein, 18 April.

18 Cumbo, J. (2017) UK retirees using 'pension freedoms' for alcohol and gambling, Financial Times, 23 October, https://www.ft.com/content/804695fc-b7ec-11e7-8c12-5661783e5589

Of course, in a few years we may hear that this person is on government support because no one wants to rent his property any longer and he cannot sell it. Real estate and rental values fluctuate, and investing in these assets with a large part of monies set aside for retirement may not be prudent.

The Financial Times article also cites other examples where entire pension pots were misused on alcohol and gambling, with the result that the pensioner is reliant on government funding to survive. With freedoms, some pensioners will make correct decisions and others will not. What is clear is that every person who squanders his or her retirement savings on unneeded goods or services puts additional pressure on the government. What is also clear is that forcing people to purchase annuities with all of their pension monies in a poor-value environment does not seem equitable.

Requiring that some minimum level of lifetime income be purchased before accessing any tax-advantaged retirement income is definitely practical but may cause undue stress if the value is deemed low. A possible solution could be a ladder approach where annuities are purchased with a portion of the pension pot over a few years. This would better average the annuity prices so that retirees feel they did not purchase the annuity at the worst possible time.

Of course, the government could mandate an annuitisation rate for monies below a certain amount in the pension pot. While it would be extremely difficult for the government to mandate a minimum annuitisation rate for a portion of the pension pot to private companies, it would assure pensioners that at least a minimum level of lifetime income would be available at a reasonable rate. It would also lower the anxiety that the pension fund in which their monies lie is offering a poor deal.

Part 3: The Swiss system

An auto-escalation system

If the idea in the last paragraph of the previous page sounds too good to be true, welcome to the Swiss defined contribution pension system. Compared to the U.S. and U.K., Switzerland has a very different culture with respect to saving for retirement. According to the Organisation for Economic Co-operation and Development (OECD),[19] the percentage of household disposable income that was used for savings in 2015 was 19.0 per cent for Switzerland compared to only 6.0 per cent for the U.S. and 0.2 per cent for the U.K. This percentage includes both personal savings and money specifically deposited into pension accounts, so it is an excellent indication of the stark difference in savings cultures amongst these countries.

Minimum savings rates into Pillar II defined contribution pension plans are mandated by law as shown below.

Table 6: Employee and employer contribution rates to Swiss Pillar II pension plans

Age	Basic option - Employee contribution (%)	Standard option - Employee contribution (%)	Top option - Employee contribution (%)	All three options - Employer contribution (%)
21 to 23	2.0	4.0	6.0	6.0
24 to 27	3.2	5.2	7.2	7.8
28 to 32	4.4	6.4	8.4	9.6
33 to 37	5.6	7.6	9.6	11.4
38 to 42	6.8	8.8	10.8	13.2
43 to 47	8.0	10.0	12.0	15.0
48 to 52	8.8	10.8	12.8	16.2
53 to 65	9.6	11.6	13.6	17.4
66 to 70	4.0	6.0	8.0	9.0

Source: BVK, www.bvk.ch, 2017.

Regardless of the plan (basic, standard or top), employers must make at least the same minimum contributions to Pillar II pensions as their employees. However, the employer is free to increase their share of contributions above the minimum requirement. This increasing scale by age is exactly what some are asking for in the U.S. and the U.K.—auto-escalation. Note that these mandatory contribution rates only apply to the portion of salary which is coordinated with Pillar I, and there is a cap. Employers typically have a similar programme for the portion of salary above the mandatory contribution cap.

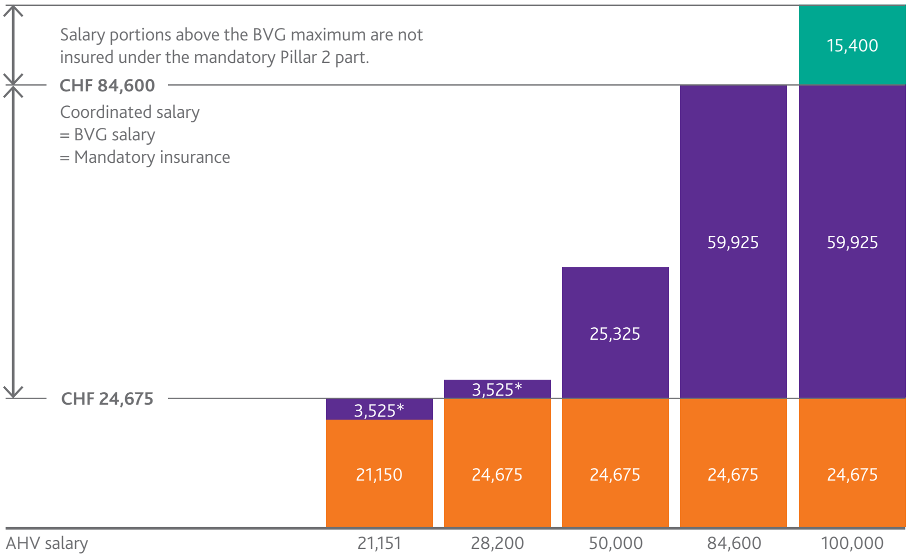
It should be noted that auto-escalation of contributions comes with some unintended consequences. Older workers may have a more difficult time finding jobs in Switzerland due to the increased cost to the employer for pension benefits. It is important to weigh the advantages against the disadvantages for any policies, especially when they relate to certain subsections of the population.

In addition to mandatory contribution rates, a portion of the savings must be annuitised unless the pension fund allows 100 per cent of the funds to be withdrawn in a lump sum[8]. In fact, about 57 per cent of people at least partially annuitised their pensions in 2015, according to Schweizer Pensionkassenumfrage statistics and calculations by Stefan Kroepfl, Head of Life Planning and Development at Zurich Insurance Group. While the percentage of people converting Pillar II defined contribution pensions plans at least partially to annuities in 2015 was lower than the 2010 annuitisation rate, the percentage of funds annuitised increased from 75 per cent in 2010 to 83 per cent in 2015. This increase is most likely due to the relatively high, government-set conversion rate. Upon retirement, this conversion rate is multiplied by the total amount of funds in the mandatory portion of the Pillar II pension for an annual lifetime annuity. For example, if a person had CHF 280,000 in the mandatory portion of a Pillar II pension fund and the conversion rate was 6.8 per cent (the rate in 2016), this person would receive a lifetime annuity of CHF 19,040 per year, or about CHF 1,587 per month, in addition to Pillar I benefits.

The Swiss Pillar II plan requires annuitisation for the portion of salary subject to a mandatory employee/employer contribution. Note that in the accompanying chart BVG is the Swiss abbreviation for Mandatory Occupational Benefits (see Figure 9). The figures are from 2015. Only the amounts in purple relate to mandatory contributions and mandatory annuitisation—unless the pension fund allows for full lump sum withdrawals.

19 OECD (2018), Household savings (indicator). doi: 10.1787/cfc6f499-en, https://data.oecd.org/hha/household-savings.htm

Figure 9: Pensionable annual salary in Switzerland



* The minimum pensionable BVG salary is always CHF 3,525 for salaries ranging between CHF 21,151 and CHF 28,200.

- Salary portion not mandatorily insured
- Coordinated salary (mandatorily insured BVG salary)
- Free salary portion without insurance obligation

Source: All you need to know about Pillar 2, Axa Winterthur, 2016.

Companies have flexibility in setting the conversion rate for amounts in excess of the mandatory contributions. Most of the time, these conversion rates are lower.[20] And the government announced decreases in the mandatory annuity rate so pensioners in 2015 knew that they were getting a very good deal. It will be interesting to see the development of these statistics as the conversion rate continues to drop.

Poverty rates in Switzerland

With an unusually high rate of savings and a large proportion of people choosing lifetime income, Switzerland should have the lowest old-age income poverty rate of the three countries explored; however, this is not the case (see Table 7).

Table 7: Income poverty rates

Percentage with income less than 50 per cent of median household disposable income

Country	65+	65-75	76+
U.K.	13.4	10.9	16.6
U.S.	21.5	17.5	27.2
Switzerland	23.4	18.8	30.5

Source: OECD Income Distribution Database 2012, www.oecd.org/social/income-distribution-database.htm; U.S. 2013 data.

These statistics are quite deceiving in that the definition of poverty is based on median disposable income and not on people actually living in poverty. Not only are the median household disposable incomes in these three countries quite different (see Table 8), but government-provided benefits differ as well.

20 Credit Suisse (2016) Falling Conversion Rates Significantly Reduce Pensions, https://www.credit-suisse.com/ch/en/privatkunden/finanzplanung/ratgeber/news/articles/private-banking/2016/10/en/sinkende-umwandlungssaetze-reduzieren-die-renten-spuerbar.html

Table 8: Median household disposable income, 2013

All Ages	
Switzerland	USD 53,778
U.K.	USD 23,019
U.S.	USD 30,960

Source: OECD, http://stats.oecd.org/index.aspx?queryid=66670, 2013.

Both the U.K. and U.S. figures are much lower than the Swiss figure, but pensioners in Switzerland are required to pay for their own medical insurance. This is not the case in the U.K. and U.S. Looking at income levels for people aged 65 and older is a bit more revealing (see Table 9).

Table 9: Median household disposable income for age 65+, 2013

Ages 65+	
Switzerland	USD 43,621
U.K.	USD 19,544
U.S.	USD 28,850

Source: OECD, http://stats.oecd.org/index.aspx?queryid=66670, 2013.

The income for people aged 65 and older in Switzerland far exceeds income for people in the U.K. and U.S. at the same age. This is mainly due to a higher savings rate (including automatic escalation of contributions) and a higher annuitisation rate. Regardless of the definition of old-age poverty, residents of Switzerland would clearly be worse off without some level of mandatory annuitisation.

Despite the high standard of living in Switzerland, the fact that retirees must continue to fund their own medical insurance, combined with the reduction in the annuity conversion rates, means that retirees will be under even more pressure in the near future. In September 2017, there was a referendum in Switzerland to reduce the mandatory conversion rate from 6.8 to 6.0 per cent and increase the retirement age for women to 65 (from 64) to be in line with the retirement age for men.[21] This referendum failed by a slim margin due, in part, to the added component of an across-the-board CHF 70 addition to pensions.

With people living longer and interest rates at historic lows, one would think that a referendum to increase retirement ages and decrease annuitisation conversion rates should easily have been passed. However, the addition of the flat increase to pensions to 'offset' the decreases seemed to send a mixed message. This shows how politically sensitive pension reform is, and it will only get more sensitive as populations continue to age.

21 Swiss Info (2017) Major pension reform fails in nationwide ballot, https://www.swissinfo.ch/eng/politics/vote-september-24_photo-finish-expected-in-vote-on-pension-reform/43536370

Part 4: Conclusions

What do we do now?

It is difficult to construct one system of occupational pensions that would work in every country. Not only do the demographic and economic environments differ but, more importantly, savings cultures differ. It is clear that with the current low interest rate environment, it is much more difficult to 'sell' the idea of a lifetime annuity.

When interest rates used to calculate annuities are 7 per cent, the combination of compound interest and mortality do a better job of 'masking' the value of the annuity.

However, using an interest rate of 1 per cent would more clearly show how long the annuitant would have to live to 'earn back' his or her investment. This type of calculation has many flaws. First, it assumes that a person knows how long he or she will live. Second, it assumes that the person has a better option. Third, and most importantly, it assumes that an annuity is an investment, but a lifetime annuity is an insurance that a person will not outlive their retirement savings.

The governments of most developed countries offer their residents an incentive to save for retirement as part of a social programme, through employment, individually or as a combination of all three. This is mainly accomplished through a system of deferred or even waived taxation. Since governments are offering this option, they should have some say in how the money is used. Allowing the participant to use the money for purposes other than retirement places the burden of old-age poverty back onto the state.

Partial required annuitisation

It seems reasonable to require that at least some of the savings be used for lifetime income. How much is certainly a debatable issue, but requiring that residents annuitise enough so that they live above the poverty line is beneficial to all parties. It also seems reasonable to give the individual a degree of flexibility, including the option to forego purchasing a lifetime annuity in financially unfavourable times. Flexibility may encourage a greater rate of savings.

How the poverty level is set in a given country will also come into play in how annuitisation requirements are determined. The goal is for as many residents as possible to live without government support, and this can only be achieved with lifetime income at some multiple of the poverty level. This calculation would include income from all sources—social or Pillar I benefits, occupational or Pillar II benefits, and private or Pillar III benefits. If a person can show that income from all three sources exceeds the required level, then savings from defined contribution plans could be used as desired. If not, then some or all of the savings must be used to purchase an annuity. The process of purchasing annuities could begin a few years prior to actual retirement so that there is a laddering of annuities. This would guarantee that an annuity is not purchased at the lowest value for the annuitant.

Government–required minimum annuitisation rate

As in Switzerland, the government can assist by setting a required minimum annuitisation rate. This would solve the issues that are occurring in the U.K. where the single private insurer within an occupational plan may offer less than optimal annuitisation rates. Of course, mandating a minimum annuitisation rate comes with its own complications as pension funds argue that paying something other than the actuarially determined rate is not financially sustainable. Setting an actuarially determined required rate could be a reasonable resolution. Annuity providers are free to use any annuitisation rate for funds not required to be annuitised—that is, where the retiree already has a lifetime income above a multiple of the poverty level.

Changing savings culture through better education

The current low interest rate environment coupled with longer life expectancies highlights the need for programmes that encourage or require additional retirement savings for everyone. In addition, governments and employers must begin to do a better job of improving financial literacy. Government programmes such as automatic enrolment into defined contribution occupational pension plans, automatic escalation of contribution rates and a requirement that some or all of the savings be annuitised into lifetime income can assist in counteracting old-age poverty. Financial literacy programmes can help to change cultures to increase personal savings for retirement.

Back to Robin

The days of employees like Robin receiving defined benefit occupational pensions are all but over. People will need to take retirement savings into their own hands. Knowledge and tools will go a long way to solving this global issue. The insurance industry can help as it is the only industry that accepts longevity risk as a core business. The issue of old-age poverty can only be tackled by a combination of government, the insurance community, educators and individuals all taking some responsibility.

With any luck, Robin is still employed by the same insurance company where she began working in 1980. If so, she is probably thinking about her coming retirement in a few years' time and the nice defined benefit programme offered so generously by her employer. Robin's children will have a completely different retirement scenario. Hopefully, they will have the tools and knowledge to make the correct decisions.

Government-supported social retirement plans (Pillar I) are under extreme financial pressure due increased life expectancies and low fertility rates. Individuals are compelled to provide for themselves a suitable retirement through occupational pensions (Pillar II) and personal savings (Pillar III). The insurance industry can help as it is the only industry that accepts longevity risk as a core business, and is a long-term provider of lifetime annuities—an insurance that a person will not outlive their retirement savings.

The Geneva Association—International Association for the Study of Insurance Economics
Talstrasse 70, CH-8001 Zurich | Tel: +41 44 200 49 00 | Fax: +41 44 200 49 99

secretariat@genevaassociation.org