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Analysis and Trends

Pension Systems in a Demographic Transition

Demographic change puts pressure on pension systems

Allianz Global Investors

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Content

Imprint

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Pension Systems in a Demographic Transition

Demographic change puts pressure on pension systems

[1] From Allianz Dresdner Asset Management, European Pensions: Reform Trends and Growth Opportunities, 2003.

[2] See Rentenversicherungsbericht 2003, Deutscher Bundestag, Drucksache 15/2144, 15th legislative term, December 2003. The current levels of pension benefits listed by the German pension insurance scheme are not comparable; they have been re-assessed based on current laws (including as a time series).

Guest article

This analysis was contributed by Dr. Renate Finke and Dr. Kathrin Nies. Dr. Finke is Senior Economist on the International Pensions team at Allianz Global Investors. Dr. Nies is Economist on the International Pensions team at Allianz Global Investors.

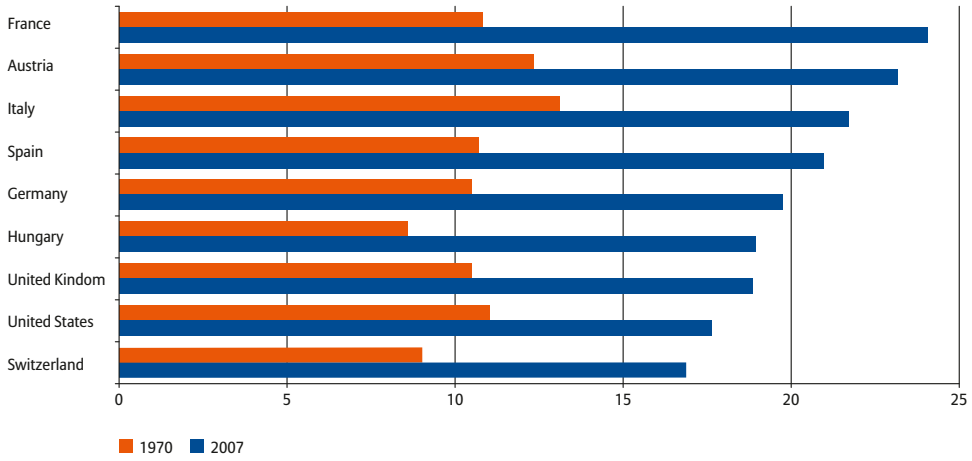
Those were the days – attractive pension systems

As a result of changing lifestyles and declining birth rates, the implicit generational compact, under which family members were cared for by the extended family, began to crumble. Consequently, formal, mostly pay-as-you-go state pension systems, were introduced at the beginning of the 20th century that covered virtually everyone in the industrialised countries. This means that the social security contributions of the younger generation serve to finance the pensions of the older generation. However, the role played by state pension systems has always been quite different from country to country. Anglo-Saxon countries such as the United Kingdom aimed to prevent poverty amongst the elderly, while many Central European countries adopted policies designed to preserve pensioners' previous standards of living. Accordingly, the various systems that emerged differed significantly.

This is clearly demonstrated by state pension-plan replacement rates, i.e., the size of the pension benefit a former employee received from the state pension scheme compared to his previous labour income. For example, in the 1990s, a new pensioner in the United Kingdom received 43%,[1] whilst the net pension level in Germany was just over 70%[2]. Due to greater need, occupational and private pension schemes developed much earlier in the Anglo-Saxon countries. By contrast, for a long time they were not that widespread in Germany, Belgium and France.

As the implications of ageing populations increasingly became a topic of public debate in the 1990s, pay-as-you-go pension systems came under particular scrutiny. Projections showed that there would be fewer and fewer people paying into the systems to support an increasing number of pensioners. Naturally, this trend resulted in enormous burdens on public budgets, making reforms essential. Another problem was posed by early retirement. This generous path to retirement introduced in the 1970s was very popular, especially as a means of integrating the growing number of baby-boomers into the labour market. However, this large group of contributors conveyed a false sense of security. As the number of pensioners grew while the number of contributors was decreasing, it became increasingly clear that this approach – which was adopted with youth employment policy considerations in mind – would not be financially sustainable over the long term. Consequently, public budgets came under significant pressure.

Chart 1: Pensioners enjoying longer retirement



Statistical values for men
Sources: Allianz SE, 2011: The burden of a longer life, Allianz Demographic Pulse No 5

Pressure for reform in the 1990s

A wave of pension reforms aimed at restoring pension systems to financial sustainability swept across countries around the world. In statutory, pay-as-you-go pension systems, there are basically two sides: the people drawing pensions and the people making contributions.

Since under the pay-as-you-go system, contributions received and pensions paid out must be equal in each period, the underlying link between the employment and/or demographic trend and the level of pension benefits can best be expressed in a simple equation:[3]

Number of contributors x
average income x contribution rate
=
Number of pensioners x
average level of pension

The fewer people contributing, the more contribution rates will have to be raised in order to finance a given pension level. On the other hand, if contribution rates remain constant, then the pensions have to be reduced. Any differences would have to be covered by the government from the current budget.

There are two trends influencing the number of pensioners. First, the baby-boom generations will reach retirement age over the next ten to twenty years; second, rising life expectancy will mean that pensioners will draw pensions over a longer period of time.

A quick glance at the trend in expected time spent in retirement illustrates the problem. For example, in 1970, pensioners in France on average drew pensions for 10.8 years; some 40 years later, they could count on enjoying their retirement for an average of 24 years.

Some countries raised the contribution rate. Primarily, though, reforms concentrated on pension entitlement in order to compensate for longer life expectancy (and therefore for the longer expected pension entitlement period). As a result, many countries implemented parametric reforms to the way retirement income is calculated and to eligibility requirements. For example, in some countries, the basis for calculating the pension was changed, so that it was no longer based on just the final years' (up to fifteen) or best years' earnings, but in many cases on the employee's average lifetime earnings. Compared to previous practice, this has resulted in a reduction in the assessment basis and thus in the level of pension. Eliminating special

[3] Here, we ignore additional sources of financing for state pensions, such as the value-added tax (or the environmental tax in Germany).

[4] Allianz Global Investors, 2011: Pension Sustainability Index 2011, International-Pension Papers, No 4

periods, such as recognition of the time spent in education, when calculating the pension or changing the rules so that pensions are indexed to inflation instead of to wages, has a similar effect.

In the 1990s, economists drew attention to necessary retirement income adjustments with respect to the retirement entry age. They noted that state pensions were providing financial incentives to people to retire early. As a result, measures were implemented to make it harder to retire early or the option was eliminated altogether. These measures focused on introducing penalties for early retirement and premiums for later retirement. This is necessary, because the pension for someone who retires early and therefore has a longer expected entitlement period must be lower than for someone who has paid an equivalent amount into the pension plan over his working life but retires one year later and therefore has a shorter expected entitlement period. Even not truly actuarially fair, these adjustments should nevertheless lead to an alignment of the effective and official retirement age.[4]

However, reducing the expected entitlement period may have the biggest impact on total pension payments. Accordingly, many countries have taken steps to increase the retirement age. These have included instituting the same retirement age for women as for men, on the one hand and, more generally, increasing the retirement age above the prevailing retirement age of 65 years on the other hand.

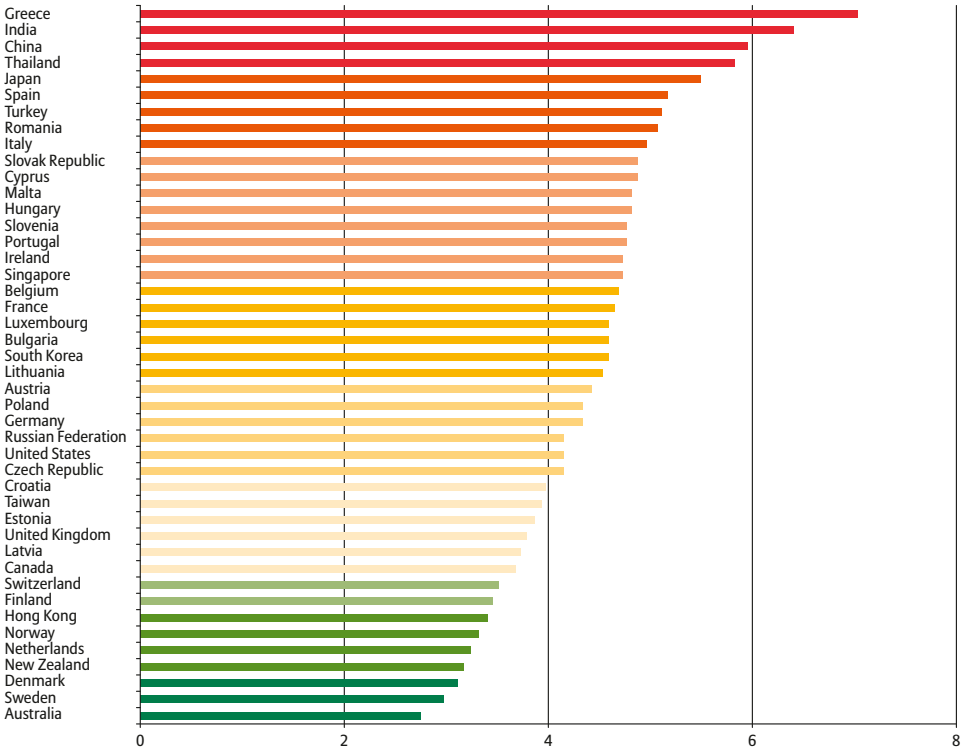
However, both in the OECD (Organisation for Economic Co-operation and Development) countries and the group of the top twenty industrial and emerging economies (G20), there are exceptions regarding adjustment of the retirement age for women. To date, these include the Czech Republic, Ireland, Italy, Poland, Switzerland and some plans in Chile. Only a few countries still have a retirement age lower than 65, and that group only includes women in certain countries within the OECD and G20 countries and Estonia, Slovakia, Slovenia, and some occupational pension plans in Chile.

Often, the reforms consisted of a combination of measures. Some countries also introduced reserve funds, in order to avoid being fully dependent on pay-as-you-go financing. Such a financial buffer is intended to provide additional funds in those years in which large numbers of people are retiring.

Even today, countries are at different stages in the reform process

All of these reform measures have helped to stabilise the long-term financial sustainability of state pensions. Nevertheless, countries throughout the world are at different stages in the reform process, depending on how their retirement systems are set up and on local demographic trends. For several years, Allianz Global Investors has been following these trends and analysing the progress of the reforms. The Pension Sustainability Index combines a series of data into a single index that gives a comparison, by country, of the pressure for reform. It assesses the pressure for reform based on actual and expected demographic trends, the country's budgetary situation and the underlying characteristics of the pension systems, such as the replacement rate and the retirement age.

Chart 2: Pension Sustainability Index*



* Scale from 1 – 10: 1 = minor need for reforms, 10 = strong need for reforms
Source: Allianz Global Investors (AllianzGI) 2011

Chart 2 shows that Scandinavian countries such as Denmark and Sweden, countries in Oceania such as Australia and New Zealand, and the Netherlands are in the best position in terms of financial sustainability. They all have pension systems that are balanced and based on several pillars. The Scandinavian countries, in particular, are characterised by an innovative first pillar. The Netherlands are known for their strong and widespread occupational pension plans. In the early 1990s, Australia pioneered the introduction of mandatory, funded pension plans (superannuation funds) and since the beginning of the 21st century, New Zealand has been developing a stronger, compulsory funded system known as the KiwiSaver. In addition, the two countries still have relatively positive demographic trends and moderate government debt levels.

Problem cases, by contrast, are Greece, amongst others because of its government's indebtedness, and China and India, whose main problem is the limited scale of any regulated pension system. The analysis also shows that those countries in which state pensions have traditionally been expected to preserve a standard of living tend to perform worse in terms of financial sustainability than countries where state pensions are regarded as a means of preventing poverty amongst the elderly.[5]

Pension systems based on the World Bank model

First pillar: state-administered, financed through social security contributions and other tax receipts, pay-as-you-go financing and defined benefit
Second pillar: privately organised, funded, compulsory, defined contribution
Third pillar: privately organised, funded, voluntary

Under the latest version, there are two additional pillars: a Zero Pillar which provides a safety net and a Fourth Pillar consisting of family support.

[5] For details see Allianz Global Investors, 2011: Pension Sustainability Index 2011, International Pension Papers No 4

[6] In Germany, several institutions have undertaken to estimate the implicit return that various generations can expect from state pensions. Some have concluded that men may expect a negative return (Ottnad and Wahl, 2005).

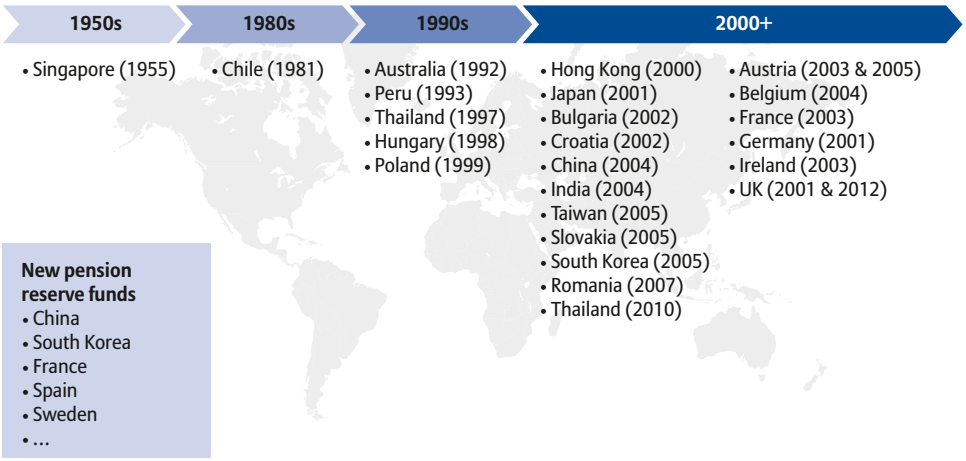
[7] Allianz Global Investors, 2010: The Global Crunch and its Long-term Impact on US Retirement Investing, International Pension Papers No 4

The resulting gap is being closed in different ways

To put it bluntly, the wave of reforms will probably mean that the younger generation will retire later, would pay higher premiums and may receive lower benefits from statutory pension insurance.[6] During the last ten to fifteen years, in order to offset declining state benefits, many countries have created incentives to compensate for impending state pension shortfalls through private pensions, which should provide a broader foundation for financial security. For example, new second- and third-pillar (occupational and private pension) plans have been introduced and tax benefits or even direct financial support payments have been granted to induce people to save more voluntarily for old age. Some countries have voted directly for a compulsory system in order to ensure asset-building for a wide range of people. As Chart 3 shows, this wave of funded pension plans has been introduced across the board since the year 2000. Most were combined with major reforms to the overall pension systems in these countries.

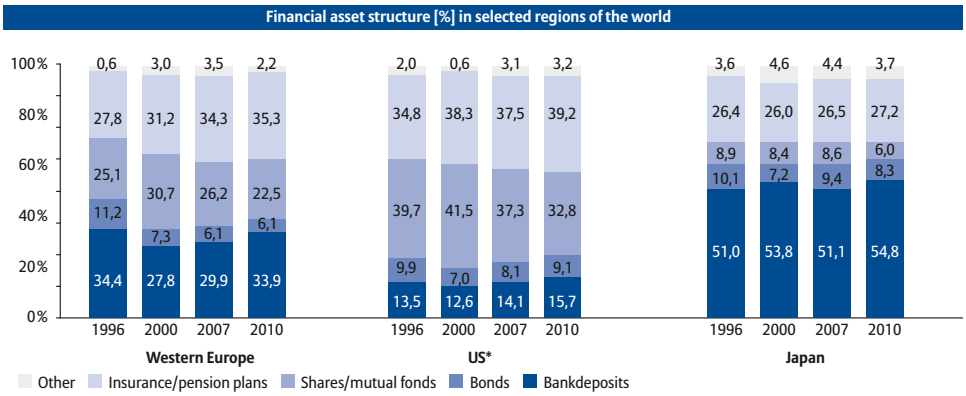
Hence, the future make-up of pensioners' income mix will be different. The previously dominant first pillar (state pensions) will give way to the funded elements. These trends have already affected the composition of private households' financial assets. A growing share of pension products is accounted for by Western Europe, where the reforms have brought major changes, including funded pension plans. Whereas insurance products and pension plans comprised just 28% of the financial portfolio as late as the mid-1990s, by 2010 this share has grown to over 35% in Western Europe (see Chart 4). Although this trend is also visible in the United States (US), it is not as strong there, again because US citizens have a much longer tradition of funded occupational and private pension plans. As a result, the changes there have not been quite as dramatic in recent years; however, this trend is also attributable to the financial crisis, as US citizens' investment preferences resulted in higher losses than for investors who were more risk averse.[7] Japan, on the other hand, is a good example of an "elderly" society. It has one of the highest old-age dependency ratios and new cash inflows barely cover outflows under existing policies.

Chart 3: Introduction of new funded pension plans



Source: Allianz Global Investors 2011

Chart 4: Structure of financial assets

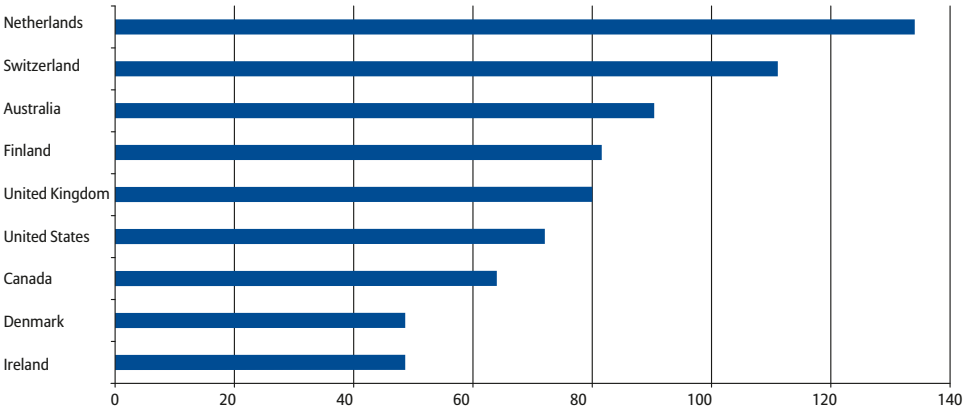


* Insurance and pension plans including IRAs (Individual Retirement Accounts); IRAs extracted from other products.
Sources: Central banks, national statistical offices, Allianz Global Investors 2011

Because of these trends, retirement savings are one of the key drivers of asset accumulation. This can be seen primarily in countries with a long tradition of funded systems, such as the Anglo-Saxon countries. Accordingly, the biggest European pension markets are in countries with this tradition. These include the United Kingdom, the US, Canada and Australia, but also the Netherlands and Switzerland, all of which have pension assets that are equal to or greater than the respective annual gross domestic product.

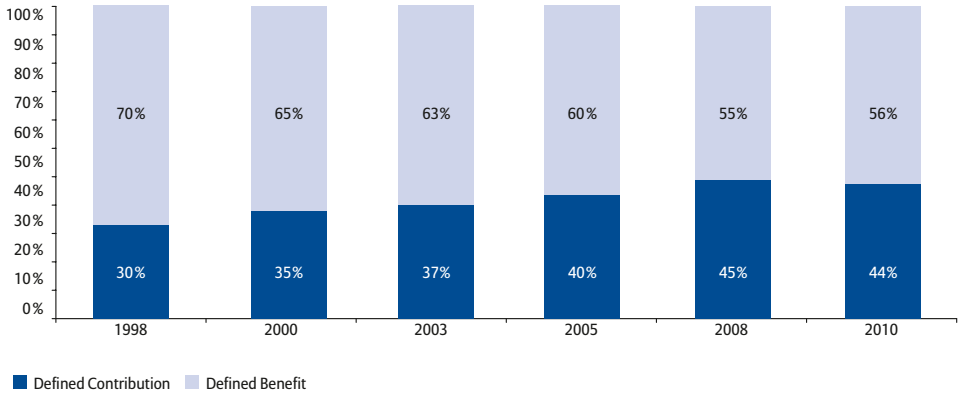
Another trend, in addition to increasing funded pension plans, is a change within the second pillar – occupational pension plans. Here, defined benefit (DB) plans are being replaced by defined contribution (DC) plans. In the process, pension products offering a guaranteed retirement income are being replaced by savings plans with which the investor will not find out definitively how much his retirement assets are worth until his retirement date, as the value will be determined by the amount he has contributed and the returns generated.

Chart 5: Autonomous pension fund assets as % of Gross Domestic Product



Note: values for the UK and Switzerland from 2009
Source: OECD, 2011: Pension Markets in Focus No 8

Chart 6: Distribution of assets by DB and DC plans



Source: Towers Watson 2011

[8] Allianz Global Investors, 2009: Retirement at Risk II – Challenges for US Baby Boomers Approaching Retirement, International Pension Papers No 3

Meanwhile, there are fewer and fewer DB plans. As Chart 6 shows, a systematic shift in the weighting has been taking place for a fairly long time. Whereas approximately 70% of pension assets were still tied up in DB plans at the end of the 1990s, prior to the financial crisis and the pension reforms, these now only account for around half. In the US, which has a longer tradition of a funded system, this trend was already visible in the 1970s. Of those employees who had any savings at all as part of an occupational pension plan in 1975, 26% had a DC plan; 30 years later, the figure was around two-thirds.[8] This trend was driven by both parties: it is in the employer's interest to transfer the demographic risks inherent in DB plans to its employees. Due to the financial crisis, the capital-market risks that employers were no longer willing to shoulder also increased. Of course, at the same time, DC plans also serve employees' needs better. DC plans become more efficient as employee mobility rises; they are portable and transparent. However, as this trend is transferring capital-market risk and/or longevity risk from the employer to the employee, the employee will have to assume much greater individual responsibility.

Are we adequately prepared for old age?

With the realignment of the retirement-income mix and the related greater emphasis on funded elements, public discussion will now focus on a new question: will future retirement income be adequate? Will people have adequate resources in old age? The statutory pension systems have become more financially sustainable; however, in most countries, this has been achieved by reducing pension levels. Now the question arises as to whether the support measures in the first and second pillars will be sufficient; that is, whether the support measures offered by politicians and providers of pension products are designed in such a way that future pensioners can expect an adequate old-age retirement income and are not in danger of slipping into poverty. The EU Commission also lent its support to this discussion with a green paper in 2010 and encouraged comprehensive deliberations.

As with the role of state pensions, there are widely differing interpretations as to what "adequate" means. To some people, this means a poverty-level pension; others expect a certain percentage of their previous salary, and still others believe that an adequate pension is one that is equal to their consumption requirements. Even if one can agree on a definition, how one can achieve this objective with the greatest possible certainty is still open to question. One uncertainty lies in people's saving behaviour; another involves capital-market risks.

Let's first examine the individual citizen, who is increasingly being forced to assume responsibility for long-term financial planning. He must decide how much he would like to save and how his money should be invested so that there will be enough to last until he dies, at some unknown future date. The individual therefore faces daunting challenges for which providers of pension products can offer support. Meanwhile, there are many ways such products can be structured on the spectrum between a pure DB plan and a pure DC plan. Above all, the recent crises in financial markets have shone the spotlight on the importance of hedging against risk. In the US, for example, people who had planned to retire soon and still had relatively high proportions of high-risk investments in their pension accounts were hit hard by the stock market crash and volatility in the financial markets and faced drastic reductions in their retirement incomes.[9] Based on such experiences, more and more products include built-in guarantees of one type or another. Some countries took preventive action, for example by stipulating minimum returns that must be earned or by requiring that the amount ultimately paid out must at least be equal to the amount paid in.

In view of the capital-market risks and the high volatility of the markets, innovative investment solutions continue to rely on diversification – but with a stronger focus on risk strategies.[10] Likewise, product solutions such as so-called life-cycle (or target date) funds are becoming increasingly widespread: to put it simply, here the proportion invested in equities is automatically reduced with age, while the proportion in fixed-income securities is increased with age. This reduces the risk of loss (but also potential earnings), the closer one gets to retirement.[11] Another innovation is the so-called structured DC plan, which enables people to choose their own, realistic retirement age and retirement income, because those are the figures that will ultimately be important to them in old age. The provider will use information about additional future sources of income in old age in order to design a customised investment strategy that will be able to generate the desired retirement income. The focus is not on generating the highest return, but rather maximising the probability of achieving the desired retirement income.[12]

[9] Allianz Global Investors, 2011: Project M No 7

[10] Allianz Global Investors, 2010: The new Zoology of Investment Risk Management, Portfolio Practice

[11] The exact strategy depends on the risk properties of each individual's expected future income from work.

[12] Allianz Global Investors, 2011: Road testing a new pension approach, Project M No 9

[13] Thaler, Richard H. and Sunstein, Cass R., 2008: Nudge: Improving Decisions about Health, Wealth and Happiness

[14] Thaler, Richard H. and Sunstein, Cass R., 2008: Nudge: Improving Decisions about Health, Wealth and Happiness

The US was one of the first countries to emphasise DC plans. Studies from the US show that people there have a lot of trouble making the right decisions. Many people save too little and even more choose sub-optimal investments.[13] In Germany, it also took a while for people to accept the the new private pension plan (Riester Rente). Following its introduction in 2001, the biggest percentage increase in plan enrolments occurred between 2005 and 2007.

More recent discussions therefore focus on how one can incentivise citizens to do a better job of looking after their retirement planning.

Individuals should be given a nudge to act in the general interest

Unlike the people in economic (for example, life-cycle) models who are assumed to act rationally and maximise utility, we humans are mere mortals. We make mistakes and get distracted by our surroundings. Most of us are simply not trained to make investment decisions. The field that deals with such issues is called behavioural economics. However, the results of research in this area also indicate that "human weakness" can be used to our advantage.

Save-more-tomorrow programmes as an example help to increase contribution rates. A person commits to paying a proportion of future wage increases into the pension plan. Here, it is possible to take advantage of the fact that, while individuals do not want, or are unable, to change their current spending behaviour, they likewise still cannot budget for and directly save future wage increases. Many occupational pension schemes in the US already use such programmes.[14]

A dynamic world

Although there are some big differences among pension systems worldwide, they all have the same objective of becoming financially sustainable and of providing people with a satisfactory living standard overall. In most cases, this has led in recent years to a shift in the weighting from the first pillar (state pensions) to the funded second and third pillars (occupational and private pensions). Here, as well, progress differs widely from country to country. At the same time, the way plans are designed has also changed. The US was a pioneer in introducing defined contribution (DC) plans, which require people to assume more responsibility for their retirement pension. The challenge today lies in providing people with support for their retirement planning. Behavioural economics has made us aware of human weaknesses, but also has pointed out ways of directing people toward good pension solutions that will likely be to their advantage. In the light of past financial crises, we now have to develop now robust investment strategies for long-term investments.

Dr. Renate Finke and Dr. Kathrin Nies

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