

# AXA PAPERS

Risk education  
and research

No. 2

## RETIREMENT

Major reforms  
have been  
initiated.



An important phase  
of life, retirement  
is positively viewed  
by most people.

redefining / standards



# RETIREMENT

An important phase of life, retirement is positively viewed by most people, with time for oneself and one's family, the start of a new, longer and more active era—one of good health if possible, with the rise in life expectancy. But retirement also crystallises anxieties, which are based for the most part on the threat of a decline in income once the working life is over. In most countries of the Organisation for Economic Co-operation and Development (OECD), the ageing of the population, together with a low birth rate—and a low rate of immigration—are putting pressure on pension systems and their financial equilibrium. Even in countries with a mainly young population, such as those in the Middle East and North Africa, pension plans are encountering financial difficulties. Faced with this challenge, major reforms have been initiated over the past 20 years to counteract the long-term financial decline of these systems. The economic and financial crisis has disrupted implementation of these reforms, brutally accelerating the rate of change and fuelling the debate between pay-as-you-go pension schemes and funded pension plans. The retirement question has become central to public policy issues in the areas of budgeting, social affairs and employment.

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Most children born in France,  
Germany and the US since 2000  
will celebrate their 100<sup>th</sup> birthdays.

100<sup>TH</sup> BIRTH

TRENDS  
OF BIRTH  
RATE INDICA

In the Maghreb  
countries, trends  
of birth rate  
indicate a major  
decline.

# 1. DEMOGRAPHIC CHANGE

Whilst the long-term demographic prospects of OECD countries may differ, there is a general consensus worldwide that the population is ageing.

## 1.1 – An ageing population

Over a long period, the ageing of the population is associated with two main factors: a decrease in the birth rate and an increase in life expectancy.

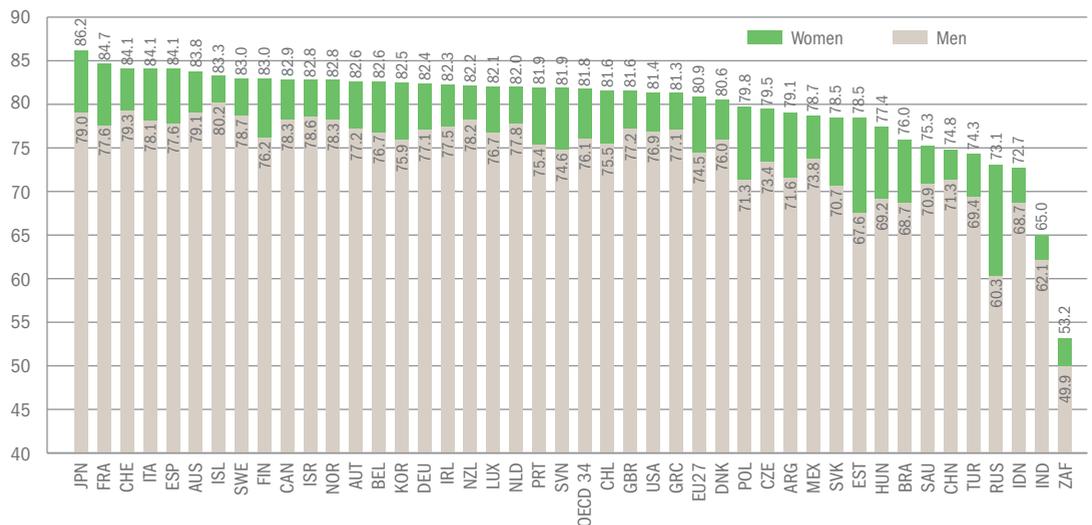
### Significant differences in birth rates<sup>(1)</sup>

France and Ireland have a birth rate of 1.97 children per woman, almost high enough to ensure replacement of the population; the required threshold is 2.05. The Scandinavian countries, Great Britain, Belgium and the Netherlands are in an intermediate situation with a

birth rate in the order of 1.8. In the other European countries, birth rates are so low they will ultimately lead to a population decrease and a very sharp deterioration in the ratio between young and old. This is the case of Germany, Austria, the countries of Eastern Europe and all the Mediterranean countries.

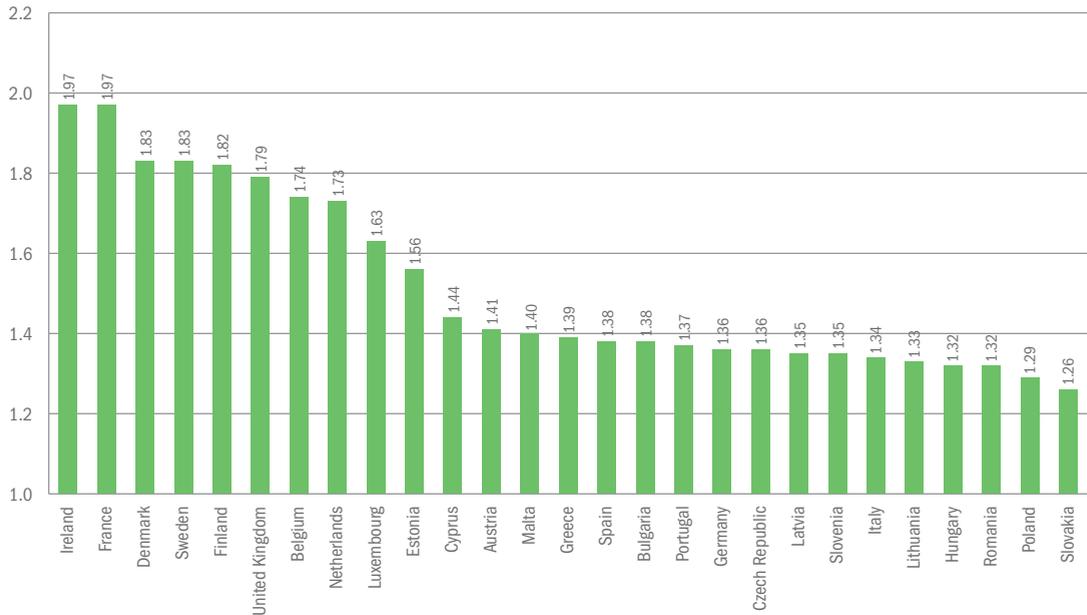
(1) The birth rate expresses the average number of children per woman of childbearing age. This statistic is used to measure the tendency of a population to increase or decrease naturally, without taking migration into account.

## LIFE EXPECTANCY AT BIRTH, IN YEARS, MEN AND WOMEN, 2005-10



Source: United Nations, World Population Prospects - The 2008 Revision.

## BIRTH RATE 2004-2008



Note: Belgium, average rate 2004-2005, United Kingdom, 2004-2007, Italy 2004-2007.

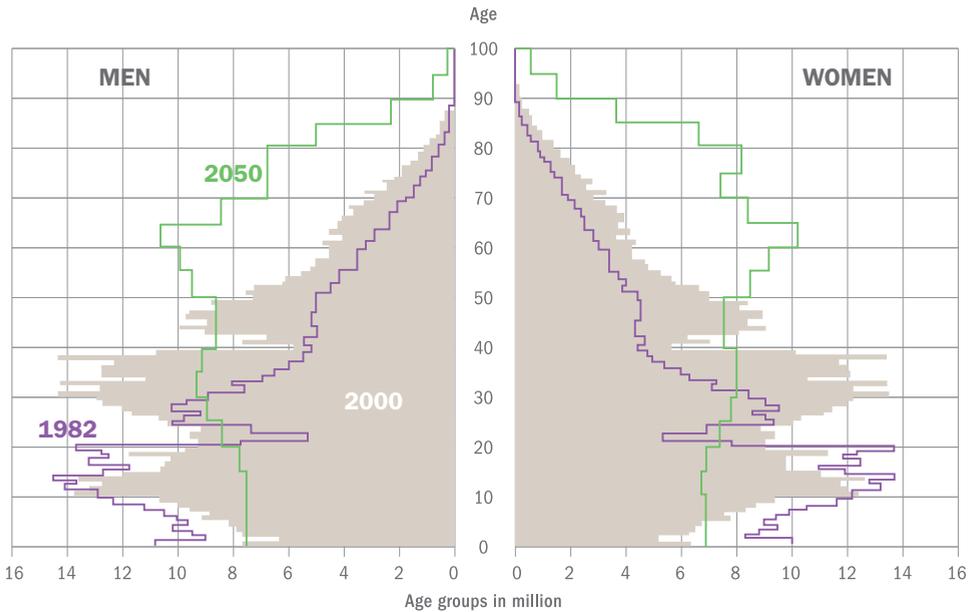
Source: Eurostat. Working document of the OFCE: "Les réformes des retraites en Europe dans la crise" (Pension reform in Europe during the crisis), No. 2010-17, July 2010.

In North America, birth rates are close to those observed in Europe. In 2010, the replacement of the U.S. population was assured by an average of two children per woman; in contrast, Canada had a lower rate of 1.7 (source: 2010 Population Reference Bureau).

In Asia, even if the situation is different in developed and emerging countries, the replacement of their populations is not assured, according to current estimates. Whilst the birth rate is increasing in certain countries—such as Japan, with a rate of 1.27 in 1980 and a forecast of 1.60 for 2050, and Singapore with 1.27 in 1980 and 1.64 forecast for 2050—these are among the 10 countries with the lowest fertility rates.

In China, the birth rate of 2.97 in 1980 should fall to 1.85 in 2050 (source: *Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat 2009*). By 2050, China will have 70 million fewer active workers than today. According to United Nations demographic projections, the proportion of persons aged 65 and over—just 7% in 2000—should more than triple by 2050, to an estimated 24% of the population, representing some 330 million people. Along with India, China exhibits another characteristic: a deficit of women. China is one of the few countries in the world to have a majority of men: 106.8 men for 100 women in 2005, and 107.5 men for 100 women in India. The single-child policy created a numerical imbalance between girls and boys, which

## CHINA POPULATION PYRAMID, 1982, 2000, 2050



Source: Censuses 1982 and 2000, United Nations prospects for 2050.

is starting to affect the entire population pyramid, with tensions expected on the “marriage market”.

Whilst the African countries, on their side, continue to record high birth rates, trends indicate a major decline, particularly in the Maghreb countries. For example, Tunisia should see its birth rate drop from 5.69 in 1980 to 1.86 in 2050; Algeria will plummet from 7.18 in 1980 to 2.38 in 2050; and Morocco will decline from 5.90 in 1980 to 2.38 in 2050.

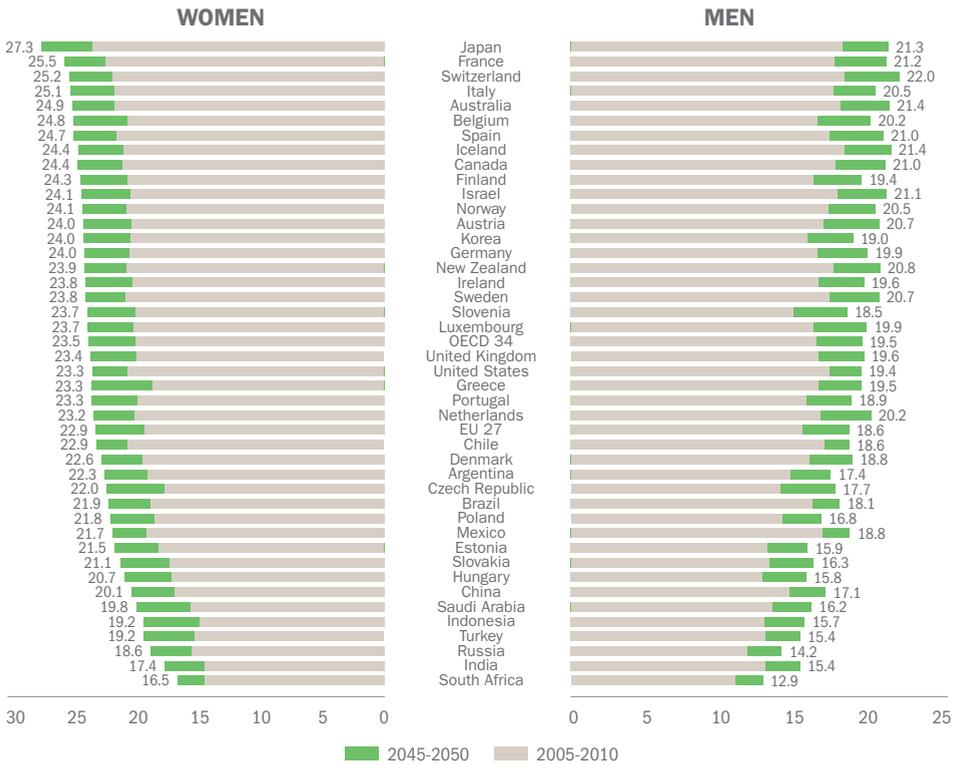
### Increased life expectancy

Having recorded continuous gains in recent decades, life expectancy is another source of disparities between countries. In Europe, Italy and Lithuania are at each

extreme. At birth, Italians have a life expectancy of 81.6 years, while Lithuanians only 70.9. Similarly, life expectancy from 65 years of age ranges from 21 years in France to 15 years in Bulgaria. These differences, more limited in the Europe Union 15, are likely to persist. They are explained in part by differences in the burden of pension costs on public finances (*source: Eurostat 2007*).

In North America, the U.S. outdoes Canada in the birth rate, but trails it in life expectancy. Canadians can expect to live until 81, or three years more than Americans. The same phenomenon is playing out in South-East Asia. Life expectancy is 74 years in China, 79 in Taiwan, 80 in South Korea—and 83 in Japan.

**ADDITIONAL LIFE EXPECTANCY AT AGE 65, IN YEARS,  
MEN AND WOMEN, 2005-10 AND 2045-50**

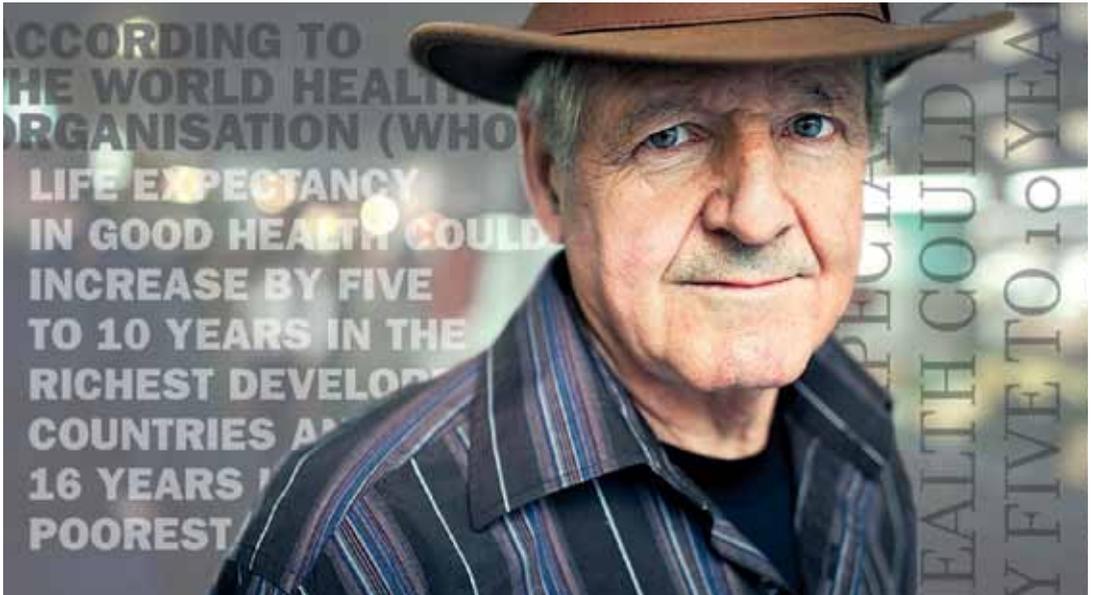


Source: United Nations, World Population Prospects - The 2008 Revision.

This increase in life expectancy is also observed in less fortunate countries, particularly in Africa. It is partly explained by the decrease in infant mortality. According to the United Nations, a country such as Lesotho, which currently has a life expectancy at birth of 45.3 years, should rise to 56.3 years by 2050. The same is true for Sierra Leone, whose figure of 47.4 years in 2010 should climb to 62.2 years by 2050.

**Living longer, but in what state of health?**

If living longer is considered progress, knowing whether the years “won” are lived in good or poorer health is very significant. In Japan, for example, women have a life expectancy of 84.7 years against 77.5 years for men. But, life expectancy in good health is 73.6 year for both sexes. The fact that women live a greater number of years in poorer health, even in a state of dependency, than do men, while their revenues are lower than those of men, has a direct impact on the financing needs of governmental pension plans and healthcare systems.



Whilst medical progress has considerably lowered mortality and improved the health of adults, research into the pathologies of old age could help diminish the risks of disability and reduce the burden of costs these illnesses place—and will place—on developed societies in the twenty-first century. In her project *Modelling Ageing Populations to 2030 (MAP 2030)*, Professor Carol Jagger, who holds the AXA Chair in Epidemiology of Ageing in the Institute for Ageing and Health at Newcastle University in Great Britain, modelled needs for pension plans and long-term healthcare through 2030 for the ageing population. Her research shows that people over 85 years—the largest-growing population group—suffer from an average of four to five diseases; it also shows that research spending on the pathologies of old age are still largely insufficient. For example, the incidence of musculoskeletal diseases is more than 50% in this age group, while research spending for this pathology represents less than 5% of medical research expenditures in the United Kingdom (source: *UKCRC Health Research Analysis*). Thus, in developed countries, the latest projections tend to show that life expectancy in good health is increasing less quickly than total life expectancy.

According to the World Health Organisation (WHO), life expectancy in good health could increase by five

to 10 years in the richest developed countries and by 16 years in the poorest countries, such as some African countries, provided governments and individuals combine their efforts to fight against the main identified risk factors (*The World Health Report 2002*, WHO). The WHO report states that the top ten risk worldwide factors are insufficient weight (underweight) for mother and child; unsafe sex; high blood pressure; tobacco consumption; alcohol consumption; unsafe water, sanitation and hygiene; high cholesterol; indoor smoke from solid fuels; iron deficiency; and obesity. Together, these 10 risks are responsible for 40% of deaths worldwide and a third of years of life in good health lost. Still according to WHO, at least 30% of the burden of disease<sup>(2)</sup> in sub-Saharan Africa or South-East Asia, for example, could be reduced by improved hygiene and prevention measures.

(2) The burden of disease, increasing the rate of sick people, leads to a decrease in life expectancy in good health.



### The impact of migration

Along with birth rate and life expectancy, migration also influences population changes. Prior to the 2007-2009 crisis, countries such as Spain, Ireland and Italy used foreign labour to support their economic growth. Although this trend has slowed in recent years, it has continued in Northern European countries. In Sweden, for example, net annual migration<sup>(3)</sup> rose from 4 per 1,000 persons during the 2003-2007 period to 6.6 during the 2008-2009 period. In the U.S., it remained constant at 4 (source: Eurostat 2009).

Globally, the demographic characteristics of each country have major consequences on the relative weight of its population in the OECD, particularly regarding those of working age. According to the central convergence scenario for Eurostat 2050, Germany will no longer be the most populated nation of Europe in 2060; it will be surpassed by Great Britain and France. Germany will even see its working-age population decrease

significantly (-23%), just like Austria, the Netherlands and Finland.

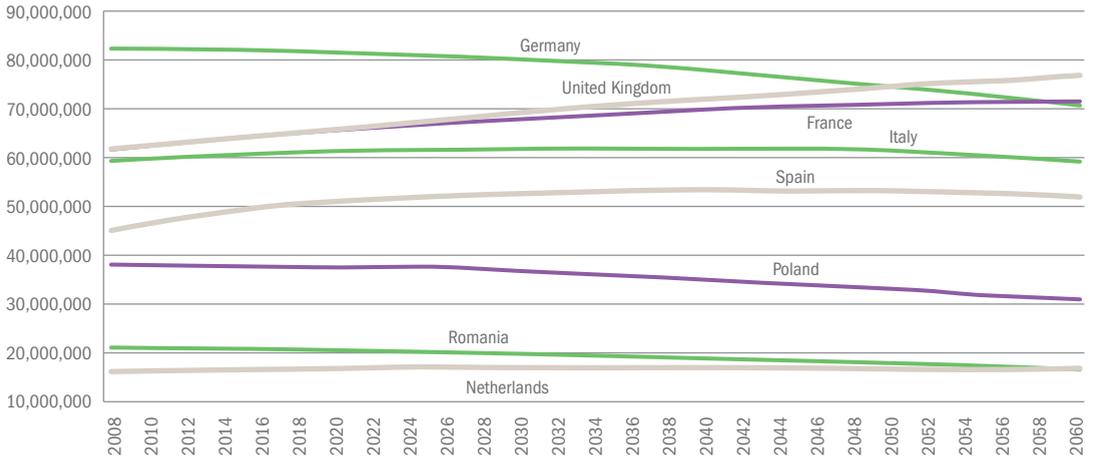
### A deteriorating demographic dependency ratio

In all OECD countries, the demographic dependency ratio<sup>(4)</sup> deteriorates. Although all the OECD countries are confronted with the ageing of their population, their respective demographic characteristics lead to significant disparities. Because of these disparities, the countries will neither be hit at the same time nor to the same extent by the demographic shock caused by the same ageing process. France, for example, will experience a shock of smaller amplitude but occurring earlier than in most of its European neighbours or in the U.S. This is partly explained by fertility, which has declined less than elsewhere, particularly in comparison to Germany or Southern European countries. It is also explained by the baby boom, which, although less pronounced than in the U.S., was much more significant

(3) Net migration is the difference between immigration and emigration in each country.

(4) The demographic dependency ratio expresses the relationship between the population over age 65 and the population between ages 15 and 64. It is the ratio between the population not yet in the workforce or no longer of an age to be in it, and the working-age population.

## EVOLUTION OF THE POPULATION IN THE MOST POPULATED COUNTRIES OF EUROPE



Source: Eurostat. Working document of the OFCE: "Les réformes des retraites en Europe dans la crise" (Pension reform in Europe during the crisis), No. 2010-17, July 2010.

## POPULATION GROWTH 2050/2008 (%)

	Total	Age 15-64
EU 15	8.3	- 6.8
Ireland	47.7	26.7
United Kingdom	21.5	10.6
Spain	17.4	- 6.4
Sweden	16.3	5.0
France	14.7	1.0
Belgium	14.0	1.4
Austria	9.6	- 5.4
Portugal	7.6	- 8.5
Denmark	7.3	- 2.8
Netherlands	3.1	- 10.8
Italy	2.9	- 14.0
Finland	2.0	- 11.4
Greece	1.8	- 22.2
Germany	- 9.4	- 23.0
United States	45.0	30.0

Source: Eurostat. Working document of the OFCE: "Les réformes des retraites en Europe dans la crise" (Pension reform in Europe during the crisis), No. 2010-17, July 2010.

and durable than in most other European countries. According to projections, beginning in 2050, Germany, Spain, Italy and the countries of Eastern Europe will be among the countries whose rate of dependency is very high, while the United Kingdom, Ireland, Denmark and Sweden will benefit from relatively low rates (in the order of 40%). France, at 45%, will be in an intermediate position.

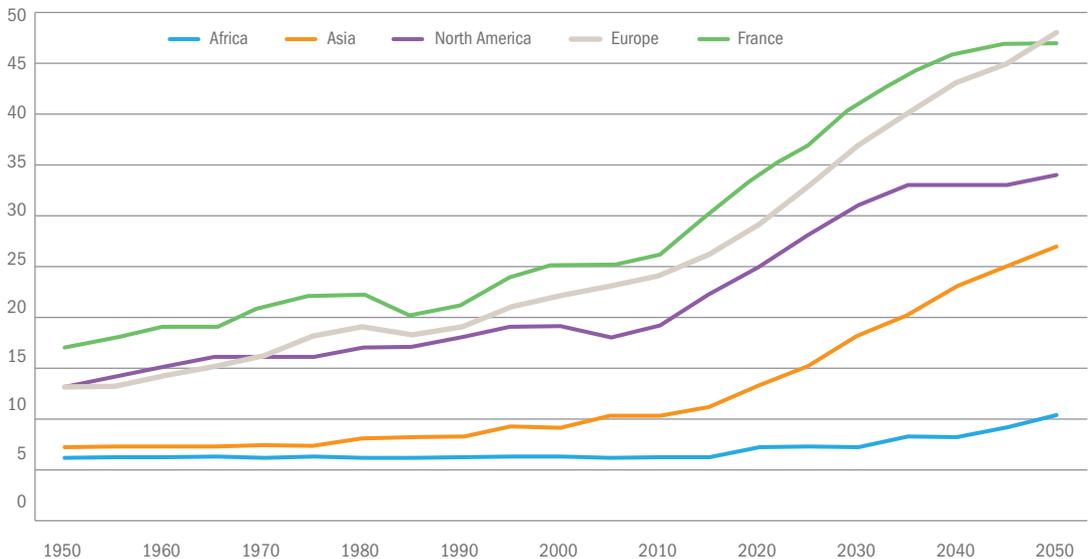
After a swelling of the age bracket of the very young, Africa and Asia will through a period declining fertility, reducing the weight of the very young, simultaneously benefiting from the presence of large numbers of people in the working age brackets. Moreover, the decline in mortality has not yet had much effect on the burden of the very old. In the case of Asia, the dependency ratio, which reached 80% in 1960-1970, should decline to about 45% in the 10 coming years, with a simultaneous rise in the dependency ratio of the very old and of the global dependency ratio from 2010-2020. In the case of Africa, this development will only occur after 2050.

**1.2 – The increased burden of retirees on active workers**

The deterioration of the dependency ratio places a direct burden on active workers. Overall, in 1950 there were over seven active workers on average for a single retiree in the OECD (source: OECD 2009). This ratio fell to six to one in 1963 and five to one in 1976. Currently, it stands at four to one. From 2023, for one person over 65 years there will be three active-age people, and only two after 2050. Japan holds a particular record in this regard: since 2005, it has the highest rate of elderly people. Currently, those over 65 represent 22.6% of the population (source: World Population Data Sheet 2010 – Population Reference Bureau). Projections for 2050 show 1.2 active Japanese workers for each retiree, against 1.9 on average in the OECD countries.

If the OCED countries with their elderly inhabitants are already concerned by the increase in retirement-age population, young countries, such as South Korea, Mexico and Turkey, and countries in the Middle East

**EVOLUTION OF DEMOGRAPHIC DEPENDENCY RATIO (POPULATION OVER AGE 65/POPULATION BETWEEN AGES 15 AND 65)**



Source: United Nations prospects, median variant, % blanchet doc.

...decrease significantly (-23%),  
...the Netherlands and Finl

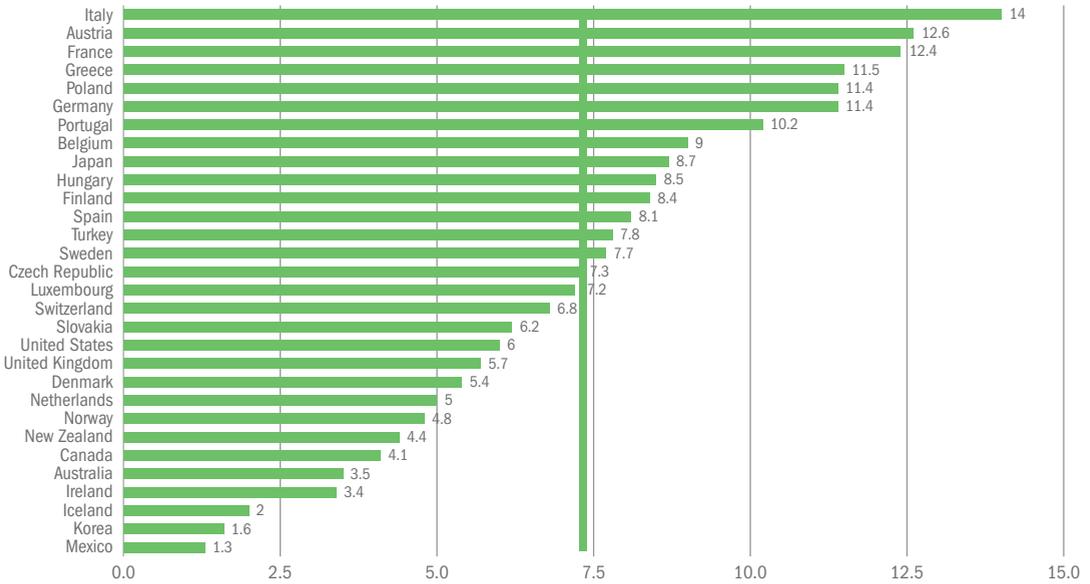
(-23%)

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WHICH REACHED  
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IN THE CASE OF ASIA,  
THE DEPENDENCY RATIO,  
WHICH REACHED 80%  
IN 1960-1970,  
SHOULD DECLINE  
TO ABOUT 45% IN  
THE 10 COMING YEARS.

RATIO  
DEPENDEN

## PUBLIC EXPENDITURES FOR PENSION BENEFITS GDP %



Source: OECD 2009. "Les réformes des retraites dans les pays de l'OCDE", Martine Durand, in "Le financement des retraites" – *Variance*, No. 39, October 2010.

and North Africa, will be affected tomorrow. South Korea, currently the third-youngest country in the OECD, will have the second-oldest population in 2050.

### The burden of pension expenditures on Gross Domestic Product (GDP)

In its overview of retirement-income systems issued in 2009, the OECD calculated that expenditures for pension benefits provided by public schemes represented an average of 17% of total public expenditures in the countries of the zone, or an average of 7.5% of their national revenue. Once again there were major variations. The share of pension expenditures in the GDP was 14% in Italy and 12.4% in France against just 3.4% in Ireland. By 2050, the share of pension expenditures in the GDP in Europe could increase by 2 to 5 points, depending on the country.

These variations are explained by the proportion of elderly in the population—already significant in Italy and France, while still modest in Ireland—but most of all by the difference in the benefits provided by the pension schemes. They are relatively high in Italy, France and Austria, and relatively low in Ireland, Spain and Finland.

Moreover, the weight of public pension schemes in the income structure of the elderly depends on the extent to which pension systems include a greater or lesser share provided by the private sector.

In countries with a well-developed social system, public pensions provide over two thirds of resources for the elderly. Public pensions provide a lesser share in countries that have opted for pension funds<sup>(5)</sup> or those in which older people continue to work.

(5) A pension fund is an investment vehicle that operates on the funding principle, i.e., the accumulating of assets over time. It converts contributions from employees and/or their employers into lump sums or annuities upon retirement.

## INCOME STRUCTURE FOR THE ELDERLY

	Public pension	Work	Assets
France	85.4	6.5	8.1
Belgium	81.0	11.9	7.1
Austria	79.5	19.0	1.5
Germany	73.1	12.1	14.8
Italy	72.2	23.8	4.0
Spain	70.4	24.5	5.1
Sweden	68.7	9.8	21.5
Portugal	66.0	29.1	4.9
Denmark	56.3	12.0	31.7
Ireland	52.9	21.2	25.9
United Kingdom	49.4	12.1	38.5
Japan	48.3	44.3	7.4
Netherlands	48.2	9.9	41.9
U.S.	36.1	34.2	29.7
Finland	14.5	11.5	74.0

Source: Eurostat. Working document of the OFCE: "Les réformes des retraites en Europe dans la crise" (Pension reform in Europe during the crisis), No. 2010-17, July 2010.

### The specific case of young countries

In 2005, the World Bank published a report titled: "Pensions in the Middle East and North Africa: Time for Change." Covering 13 countries<sup>(6)</sup> in the area, the study shows that a country may have a young population and yet have tensions over pensions. All the countries involved—where more than 60% of the population is under 30 years of age—have earnings-related pension schemes financed on a pay-as-you-go basis, which date from the late 1960s or early 1970s. These generous systems provide a pension of nearly 80 percent of before-retirement earnings, for full career. However, these schemes provide this level of coverage for only a quarter of the active population. Despite the fact that only 5–10 percent of the elderly receive a pension, expenditures as a share of GDP are already in the 1–3 percent range, this is high, given the proportion of elderly in the population.

A rapid increase in old-age economic dependency ratios should take place within the next 15 to 20 years. Most pension funds in these countries are accumulating large and unsustainable unfunded pension liabilities, which, in the absence of reform, will have to be financed by future generations.

(6) Algeria, Djibouti, Egypt, Iran, Iraq, Jordan, Lebanon, Libya, Morocco, Syria, Tunisia, West Bank and Gaza, and Yemen.

## 2. THE DIFFERENT PENSION SYSTEMS

*Within the OECD, pension systems are based on three tiers whose role and responsibility vary according to the country and its social model.*

### 2.1 – Basic schemes, supplementary plans and voluntary initiatives

The first tier includes basic schemes that rely on mandatory social insurance or social security. These schemes<sup>(7)</sup> exist in all countries, but their size varies.

The second tier is comprised of supplementary plans that are generally organised in an employment setting. They include corporate schemes and occupational sectors schemes. In some countries, this tier is left to the initiative of private players; in others, it is legally mandated. The second tier does not exist everywhere.

The third tier is voluntary and depends on individual initiatives. It covers various forms of individual retirement-savings, and may be more or less developed and encouraged, depending on the size of the other two tiers.

#### Basic schemes

In the OECD countries, all retirees have a minimum level of income assured by a basic pension scheme. In Germany, Belgium, Spain, Italy and Sweden, the basic retirement pension provides over 80% of retirees' pensions. In Japan, where a mandatory supplementary second tier is closely organised around the basic plan, the two schemes represent 85% of retiree income. In France as well, the mandatory public pension scheme combines with a basic pension scheme and a supplementary pension system to provide 85.4% of the revenues of the elderly (*source: OECD 2009*).

In Canada, however, the basic pension and mandatory public supplementary pension supply only 45% of retiree income on average. This figure falls to less than 40% in the U.S., the Netherlands and the United Kingdom. The basic Social Security pension provides an average of a third of retiree income in the U.S., 34% in the Netherlands, and about 21% in the United Kingdom. (*source: Cahiers de la DGTPE, June 2009*).

#### Supplementary plans and corporate pension plans

The second tier is composed of pension plans for enterprises and occupational sectors; employees are affiliated to the plan through their employers, and contributions come from employers and employees. These plans play a major role in some countries. In the United Kingdom, it is the central scheme, and supplies most of the retirement pensions for individuals. In Japan, it is also an important part of the system. In many countries, however, employees are increasingly encouraged to build up retirement savings, either through mandatory private plans, such as in Sweden, Poland and Norway, or voluntary plans that benefit from tax advantages, such as in Germany and the Netherlands. Sweden and Norway require employees to make small contributions to a private retirement plan. In New Zealand, employees are automatically affiliated with a private plan. In the U.S., where the average pension from the public scheme barely exceeds a third of the average salary, the pension is supplemented by employee retirement savings sponsored by corporate employers. As the American economy has been hard

(7) These schemes provide a minimum income that may take the form of a resource-tested guaranteed minimum income, a flat-rate pension (which may be universal or specific to the pension scheme), or a guaranteed pension based on income level. The schemes often rely on the pay-as-you-go principle: the contributions made by the active work force are instantly divided among all pensioners.

17%

Expenditures for pension benefits provided by public schemes of total public expenditures in the OECD countries.

hit by several crises, defined-benefit plans have become more difficult for companies to fund. They prefer to rely on retirement-savings plans with defined-contributions, in which the employer makes matching contributions, rather than promising benefits.

### Individual savings

The third tier is based on voluntary retirement savings directly held by financial institutions. This is a major source of revenue for retirees in the U.S. (16%). In the United Kingdom, Canada and the Netherlands, these savings account for about 40% of retiree income, versus almost 30% in Denmark, Ireland and Norway, and 15% in Germany.

In France, Belgium, Italy and Spain, individual savings only represent 6% to 8%, with, however, major disparities. In France, for example, non-salaried workers (artisans, merchants, farmers and independents), who have a less advantageous basic scheme than private-sector employees, resort to voluntary savings. They make all the more use of it because the so-called “Madelin law” of 11 February 1994 allows them to deduct from taxable income the contributions they make to establish supplementary retirement savings. Still, although voluntary savings are gradually increasing in importance, it remains difficult to identify precisely within household savings which part is specifically aimed at retirement.

## 2.2 – Pay-as-you-go schemes and funded pension plans

In a pay-as-you-go pension system such as in France, contributions made by active workers for their old-age insurance are immediately used to pay retiree pensions. This system is thus based on the principle of solidarity among generations. Its financial equilibrium depends on the ratio between the number of

contributors and the number of retirees. The rates of growth of revenues and of the active population constitute the two main levers of the system.

In a funded pension scheme, the logic is different: today’s active workers save for their own retirement. Contributions are invested in financial or real estate assets. This funding approach can be used in an individual or a group plan.

As regards mandatory old-age insurance schemes, very few countries only have privately funded plans. This is the case of Denmark and the Netherlands, along with Australia and Mexico. Elsewhere, public schemes mainly rely on the pay-as-you-go principle. Some countries, such as Sweden, Poland, Portugal, Slovakia and Norway have nonetheless chosen to supplement them by privately funded pension plans (*source: Conseil d’orientation des retraites (Pensions Advisory Council), Plenary Session of 29/09/2010*).

### Methods for acquiring retirement credits

In a pay-as-you-go scheme, retirement credits can be calculated using three main techniques: annuities, points, or notional accounts.

#### - Annuity schemes

In an annuity scheme, the pension is calculated from the duration of insurance validated by the scheme and from a base salary, which depends on income from work. Each year, the insured worker acquires a pension amount that is a percentage (the annuity rate) of the base salary. At the date of retirement, the pension is equal to the portion of the base salary multiplied by the insurance duration. Annuity schemes are designed to provide replacement revenue. The longer the period of contribution, the higher the amount of the pension.

## MAIN CHARACTERISTICS OF PENSION SYSTEMS

Country	Type of pension scheme	Pension calculation method
Germany	Points	The pension amount is obtained from the following formula: $PEP \times 1.0 \times AR$ PEP = personal compensation points ( <i>persönliche Entgeltpunkte</i> ): The sum of personal compensation points is calculated on the basis of the compensation subject to each year's insurance contributions (up to a ceiling for contributions) divided by the average national compensation for the same year. 1.0 = pension type factor (factor determined according to social protection objectives) AR = current pension index ( <i>aktueller Rentenwert</i> ). The current pension index corresponds to the average monthly pension received for a year of insurance by an average employee. It is recalculated every year according to the evolution of compensation and net salaries.
Belgium	Annuities	For each year taken into consideration, a pension share is accorded equal to the following formulas: - Single or married without dependent spouse: $S \times 60\% \times 1/45$ . - Married with dependent spouse: Men: $S \times 75\% \times 1/45$ . S = salary for reference (gross salary up to a ceiling).
Canada	Annuities	25% of the worker's average income over his working career (up to the 34 best years).
Spain	Annuities	The pension amount ( <i>pensión de jubilación</i> ) is obtained by applying a percentage to the basis of the calculation. - The basis of the calculation is the result of the division by 210 of the worker's contributory earnings during the 180 months preceding the pensionable event. - The percentage corresponds to the number of years of justified contributions by the worker, according to a scale starting at 50% for 15 years of contributions, and increased by 3% for each additional year of contributions between the 16 <sup>th</sup> and 25 <sup>th</sup> year, and by 2% from the 26 <sup>th</sup> year to reach 100% for 35 years of contributions.
U.S.	Annuities	Average salary for the best 35 years of compensation. To calculate the average, past salaries are adjusted in line with the evolution of the average salary of all workers who contributed each year. The total indexed compensation of the best 35 years is divided by 35 and then by 12 to obtain the base salary (or average indexed monthly earnings). However, the pension calculation scale is degressive as a function of the base salary level.
France	Annuities/points	Annuity-based pension formula (general pension scheme): $S \times t \times n/150$ . t = pension payment rate, determined as a function of the worker's age and number of years of insurance: full rate of 50% for 65 years or 160 quarters of insurance in 2008 (164 quarters in 2010) S = average annual salary of the best 25 years, limited to the social security ceiling. Point-based pension formula (Arcco and Agirc): Each year, contributions are used to acquire points, depending on the purchase value of the point; on retirement, the pension equals the number of points acquired over the career multiplied by the disbursement value of the point.
Italy	Notional accounts	Each year of contributions equals a conventional contribution of 33%. The contribution amount (the virtual capital) is adjusted every year according to the average rate of increase of the GDP for the past five years. The pension amount is calculated by multiplying the amount of virtual capital by an actuarial coefficient that varies with age.
Japan	Annuities	The pension amount is divided into three parts (A + B + C), calculated as follows: - Part A is a fixed amount = 1,676 yens x the number of months covered by the scheme (up to 480 months) x 0.985; - The Part B amount depends on the worker's level of compensation = ((a) + (b)) x 1.031 x 0.985; - Part C consists of supplementary annual benefits for the spouse or for each child.
Netherlands	Private assets	
United Kingdom	Annuities or private assets	The S2P pension depends on income from the entire working career, based on three "earning bands", as follows: Band 1 (between €5,944 and 17,145), Band 2 (between €17,145 and €39,497) and Band 3 (between €39,497 and €50,851), where all workers with an annual revenue falling between the lower and upper limits of the band will acquire pension credits equal to those of the upper limit.
Sweden	Notional accounts	Pension linked to income ( <i>inkomstpension</i> ): the virtual contributions accumulated are annually indexed to the evolution of average salaries (with automatic stabilisation that tracks the scheme's financial prospects). Pensions are calculated by dividing the virtual capital by a coefficient that depends on the average life expectancy at the age the worker retires. Supplementary funded pension plan ( <i>premiepension</i> ): Only lifetime pensions are granted. The later are also calculated using an annuity that reflects the remaining life expectancy. Standard insurance principles are applied.



- Point-based schemes

In point-based schemes, the insured acquires points each year, which will accumulate over his entire career. The monetary value of the points is only known at the date of retirement, and is based on the disbursement value of the point at that time. The advantage of this system is that it avoids the depreciation of benefits due to changes in the cost of living. But, it may prove to be less favourable during an economic crisis: if salaries do not grow quickly enough or if the number of retirees rises more rapidly than the number of active workers, fewer points are attributed. In Europe, only four countries use point-based schemes: Germany (since 1992), France (for supplementary schemes), Norway and Slovakia.

- Notional-account schemes

The notional-account approach, an innovation in the pension field, is designed to ensure there is an actuarial balance between contributions made and pensions received by each generation, given the particular methods for acquiring and drawing on retirement credits. Each contributor acquires a virtual fund of retirement credits, which reflects the contributions he made. But the value of the fund varies with the life expectancy of the contributor's generation, and with the contributor's age at time of retirement. The integration of these demographic variables, along with GDP growth variables, tends to provide automatic stabilisers for notional accounts. With the help and guidance of international organisations, which are promoting more personalised pensions closely linked to contributions, several European countries (Latvia, Italy,

Poland and Sweden) have replaced their defined-benefit public pension schemes with defined-contribution notion-account public pension schemes.

### **Defined-benefit or defined-contribution funded pension plans**

In funded pension plans, also called “occupational” plans, there are two variants: defined-benefit plans and defined-contribution plans.

#### **- Defined-benefit pension plans and their hybrid version**

In a defined-benefit pension plan, the plan’s sponsor (a company, occupational sector, pension fund, etc.) is required to pay out a specific amount throughout its members’ retirement. The risk is therefore not borne by the saver, who has no investment decisions to make. It is the fund’s responsibility to efficiently invest its assets so as to honour its commitments. Many Anglo-Saxon pension plans are based on this model. These schemes are affected by increasing lifespans, as benefits must be paid over increasingly longer periods. This phenomenon, associated with lower-than-expected returns, a decline in interest rates and the requirement to report actuarial earnings and losses on corporate balance sheets, has considerably increased the pressure on pension fund sponsors. This is compounded by the serious financial difficulties that some companies have encountered during the economic crisis.

In hybrid defined-benefit pension plans, there are still benefit guarantees, but only partial ones, as guarantees may be re-assessed depending on pension fund solvency. In a hybrid plan, it is also common to find guarantees for some benefits, while the others are associated with a goal, not a commitment. For example, indexing pension payouts to inflation might be defined as a goal and not a guarantee. Whilst savers are well protected by guaranteed benefits, they are dependent on the capacity of their pension fund to take the appropriate management decision as regards conditional benefits.

#### **- Defined-contribution pension plans**

In this type of scheme, employees invest but have no guarantee as regards future payouts. The scheme may include matching contributions from the employer to encourage employees to save. The only known variable in this type of system is the contribution, hence its name. In these plans, investment decisions are made by the saver, who also bears the financial risk. In this context, the risk taken by the saver needs to be aligned with his goals for future income, as well as his tolerance of risk. The saver chooses from a range of employee savings products going from the most defensive to those with intermediate profiles (often termed “balanced”), which combine exposure to high-risk financial markets and less risky ones.

## 3. THE ISSUE OF REFORM AND IMPACT OF THE CRISIS

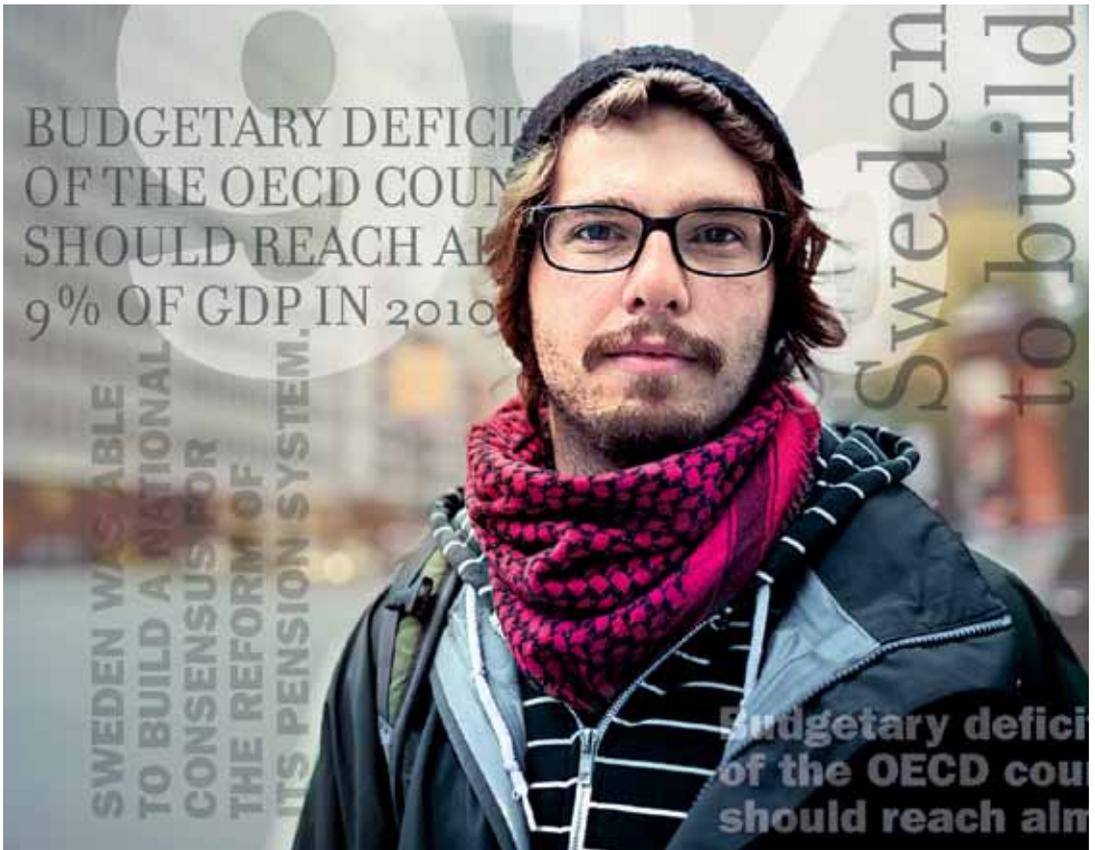
*Early on, most industrialised countries, particularly in Europe, recognised the ageing of their population and initiated reforms to improve the long-term financial equilibrium of their pension systems.*

These reforms, prompted by similar needs, have mainly addressed pension-system parameters: raising the retirement age; gradually withdrawing or eliminating early retirement benefits; reducing the level of public pension plans; diversifying the sources of financing through measures that encourage companies to establish their own pension schemes, and getting workers to save to compensate for the decline of public pension plans.

Only a few countries have undertaken a broad systemic reform. Following the model of Sweden—which took the lead some 15 years ago—Italy, Hungary, Poland and Slovakia established collective pension funds and introduced Non-Financial Defined Contribution (NDC<sup>(8)</sup>) accounts. Sweden is often cited as an example in the reform of its system, as it was able to build a national consensus by developing a change management methodology based on negotiation, and clearly communicating the implications of change.

These strategies, which were strongly encouraged and supported by the OECD and the European Commission, were designed to contain or even reduce the burden of public expenditures while increasing the role of financial institutions and markets. But one of the effects of the 2008-2009 crisis was to sharply increase public finance deficits, consequently reducing governments' margin for manoeuvre. According to the OECD, budgetary deficits of its member states would reach almost 9% of GDP in 2010. While the crisis did not affect all developed economies equally, it appears that no pension scheme in any country was safe from its impact. Pension funds saw the value of their investments plummet by 23% in 2008, or about USD 5,400 billion. In the last three years, there have been signs of economic recovery. Nonetheless, growth remains weak in the U.S. and uneven in Europe, while Japan now has to deal with the economic consequences of the tsunami and Fukushima nuclear accident. In some countries, a high level of unemployment has further complicated the return to budgetary equilibrium for public pension plans.

(8) A Non-Financial Defined Contribution (NDC) scheme functions like a personal retirement-savings plan, but with pay-as-you-go financing.



### 3.1 – Reforms initiated before the crisis

In the great majority of OECD countries, reforms mainly concerned issues about longer working lives, including the gradual elimination of early retirement, and an increase in the legal retirement age.

#### Longer working lives

Until the end of the 1990s, while life expectancy regularly increased, the average age of retirement continuously declined in the OECD countries. Faced with an official retirement age, numerous early retirement measures allowed for an earlier exit. However, since 1999, spurred by reforms carried out over the past ten years, the retirement age for men and women has tended to increase by two years on average. For both men and women, the legal retirement age is now almost 64 years on average. Sweden and Finland have eliminated the notion of standard age, with Sweden allowing an exit between 61 and 70 years, and Finland between 63 and 68 years. This will also ultimately be the case for Italy.

#### - Raising the legal retirement age

The legal retirement age plays an important symbolic role, as it specifies the minimum age at which one is legally entitled to start drawing one's pension. This parameter, easy to grasp, has the swiftest impact on the financial equilibrium of retirement schemes. Many countries in which retirement age was below 65 years have gradually increased it to that level. Nine countries—Australia, Germany, United Kingdom, the Netherlands, Spain, Denmark, Iceland, Norway and the U.S.—have or will set the retirement age above 65 years, as high as 68 years for the United Kingdom (66 years in 2020, followed by 67 in 2034 and 68 in 2044). France is in a unique situation, as it combines two age-related conditions for obtaining a full pension: be 65 years of age and have contributed for at least 42 years, or be 67 years of age, regardless of the number of years of contribution.

## EFFECTIVE RETIREMENT AGE AND LEGAL RETIREMENT AGE

	Average age of stopping work 2008	Retirement age 2009	Age of entitlement to early retirement 2009
Germany	61.7	65 (67 <sup>F</sup> )	63
Austria	60.9	W60 (65 <sup>F</sup> )-M65	W57-M62
Belgium	61.6	65	60
Denmark	61.3	65 (67 <sup>F</sup> )	60 (62W)
Spain	62.6	65 (67 <sup>F</sup> )	60
Finland	61.6	63-68	62
France	59.3	60* (65 <sup>F</sup> )	58
Greece	61.4	65	60
Ireland	64.1	66	
Italy	60.8	W60 (65 <sup>F</sup> )-M65	57
Netherlands	63.2	65 (67 <sup>F</sup> )	63
Portugal	62.6	65	60
United Kingdom	62.6	W60-M65 (68 <sup>F</sup> )	
Sweden	63.8	61-70	
Japan	68.0	W61-M63 (65 <sup>F</sup> )	60
U.S.	64.2	67	62

\* The retirement age in France rose to 65 years in 2010. W = Women; M = Men; F = Future

Source: OECD 2009. Working document of the OFCE: "Les réformes des retraites en Europe dans la crise" (Pension reform in Europe during the crisis), No. 2010-17, July 2010.

### - Gradually eliminating early retirement schemes

After having introduced early retirement schemes in the 1970s to counteract the effects of massive unemployment, these schemes have been gradually cut back or recourse to them penalised. Either the early retirement age has been raised, or the number of years of contributions required to qualify has been increased. France has chosen to gradually eliminate access to public early retirement plans and to tax private ones.

Many countries have, in parallel, taken measures to encourage workers to work longer through pension-reduction and pension-increase systems. In the U.S. and Germany, workers may retire before 63 years of age under certain conditions, but with a sharp reduction in their pension. This is also the case in Japan, Austria and France. Conversely, several countries have introduced pension increases to encourage work beyond the legal retirement age.

Pension increases take into account the fact that the retiree will receive a pension for a shorter period, and, in the event of a longer working life, contribute more to the scheme. Pension increases are: 2% per year in Spain (3% if the contribution period is more than 40 years), 5% in France, 6% in Canada, 8% in the U.S., 8.4% in Japan and 10.4% in the United Kingdom. Belgium does not have an increase mechanism as such, but gives a pension bonus to people who work beyond 62: each additional day of full-time work (or equivalent during a year) provides a supplement of about 2 euros of annual pension (source: *Conseil d'orientation des retraites (Pensions Advisory Council), January 2011*). In Sweden and Italy, pension increases depend on life expectancy.

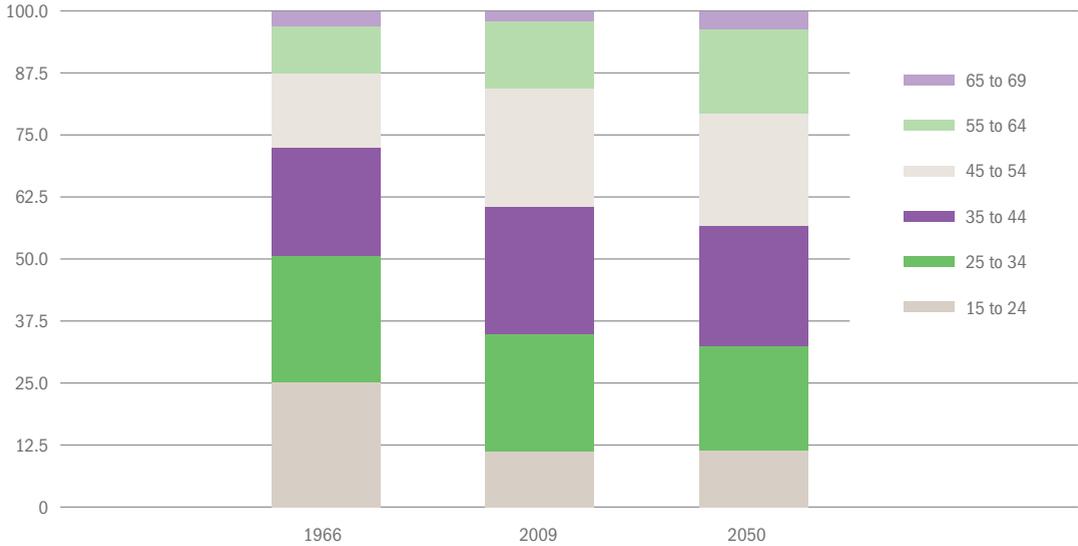
In annuity-based pension plans, as well as in the point-based German pension plan (which is designed for a contribution period of 45 years), the pension amount

The retirement age in France rose to 65 years in 2010.

Belgium gives a pension bonus to people who work beyond 62 years of age.

**THE EMPLOYMENT RATE OF FINISH WORKERS AGED 55 TO 64 ROSE FROM ABOUT 35% IN 1994 TO ALMOST 55% TODAY.**

### AGE-STRUCTURE OF EMPLOYMENT, 1966, 2009 AND 2050



Note: The age structure calculated for 2050 assumes that employment rates by age remain the same as they were in 2009.

Source: OECD. Employment Database; OECD calculations using United Nations, World Population Prospects – The 2008 Revision.

is determined on a pro rata basis in the event the full contribution period is not reached. Lastly, the concurrent drawing of income from employment and pensions is increasingly facilitated. In some cases, there are restrictions, such as in Germany, which limits the maximum income from work (400 euros gross income in 2008). In Canada, the U.S. and Italy, there is no longer any limit to concurrently drawn income, once the age for obtaining a full pension has been reached.

#### - Employing older workers

However, raising the legal retirement age and adopting incentives to extend the working life clash with the habits and attitudes of companies and employees alike. Changing this takes time, whether this involves

modifying career paths, adapting working conditions, or supporting employees through training. In fact, in almost two-thirds of OECD countries, the effective age people leave the workforce remains below the legal at which retirement age. In the 2002-2007 period, men left the workforce before 60 years of age in eight OECD countries (Austria, Belgium, Finland, France, Hungary, Italy, Luxembourg and Slovakia), often through disability or unemployment systems. Under these circumstances, the employment of older workers proves to be one of the keys to the effectiveness and success of the reforms underway.

Finland's policy for employing older workers should be highlighted as an example. The employment rate of

Finish workers aged 55 to 64 rose from about 35% in 1994 to almost 55% today, against about 38% in France and 45.6% for all countries in the European Union. The goal of Finland's policy is to maintain older workers in their jobs rather than reinsert them in the workforce, this in a country that has had a fairly high rate of unemployment for almost 20 years. Major campaigns for civic engagement were launched in parallel to pension measures designed to limit the number of people exiting the workforce. Measures included eliminating most early retirement provisions; introducing an attractive pension-increase system; and holding companies financially responsible for a portion of the unemployment benefits paid to employees over age 55 who were terminated by the company but did not find new employment. In addition to maintaining older workers in their jobs, the policy aims to make working longer acceptable to public opinion, and improve the social integration of older workers and retirees.

Postponing retirement also raises the issue of hard working conditions and occupational disability. Many countries that dealt in a specific way in their pension plans with certain categories of workers whose activity is recognised as hard today tend to consider that work-related health problems should be managed by improved preventive measures and improved working conditions.

#### **Income replacement rate and pension levels**

The reforms initiated by the OECD countries have also had an impact on pension levels by acting on income replacement rates<sup>(9)</sup>. The latter have dropped from 61%

on average before the reforms to 53% afterwards. This reduction was achieved by lengthening the period taken into account for calculating the pension. In France, as of 1993, the period rose from the best 10 to the best 25 years. In Finland, Poland, Portugal and Sweden, the entire career is now the basis for the pension calculation. Another moderating influence was introduced by changing the method for calculating pensions. In a period of low inflation, indexing pensions to prices rather than salaries (which are thought to rise faster) also helped lower pension levels. Overall, average income replacement rates for full-career workers will be only 43% in Germany, but will reach 80% in Denmark.

These measures were usually accompanied by a mechanism to protect the income of the most fragile. In the United Kingdom, flat-rate pension payments were revised upwards, as was the case in South Korea. The U.K. also had recourse to special payouts over the years, as did the U.S. and Greece. As of 2011, Finland will guarantee a minimum income through a pension 23% higher than the current national pension. Belgium, Spain and France prefer to increase the minimum old-age pension beyond the usual indexation rules. France, which already guarantees a minimum retirement to cover retirees who were not able to contribute enough, also guarantees employees who worked their entire career at the minimum wage (the SMIC, or *salaire minimum interprofessionnel de croissance*) a replacement rate of 85%. To strengthen social safety nets, the reforms have in general planned to extend coverage by mandatory pension schemes to a broader population.

(9) The income replacement rate is the ratio between the pension amount and that of the last salary, compensation or revenue received.

## EVOLUTION OF INCOME REPLACEMENT RATE

GDP %	2007	2050	2007/2050
Greece	73.1	83.7	14.5
Spain	57.8	54.5	- 5.7
Italy	68.5	51.3	- 24.5
Finland	49.1	48.3	- 1.6
France	63.3	48.3	- 23.7
Belgium	44.8	44.6	- 0.4
Austria	54.9	42.7	- 22.2
Germany	51.4	42.5	- 17.3
Netherlands	43.8	40.7	- 7.1
Portugal	46.3	36.7	- 20.7
Denmark	39.4	37.5	- 4.8
United Kingdom	34.6	35.8	3.5
Ireland	27.3	31.5	15.4
Sweden	49.3	31.4	- 36.3
U.S.	36.2	32.7	- 9.7

Source: European Commission, 2009 Ageing Report.

### The increased role of private savings

To compensate for the decline in the level of pensions provided by public pension schemes, while avoiding an increase in the level of mandatory deductions, many countries have encouraged employees to create their own retirement savings through private individual or collective schemes. These plans may be voluntary or mandatory: Sweden and Norway require employees to make small contributions to a private pension plan. Often, these plans come with tax advantages. This is true for Germany, with its “Riester” measures, and for the Netherlands. New Zealand, meanwhile, created the KiwiSaver scheme, a private pension plan to which employees are automatically affiliated, although they are allowed to leave it. In the United Kingdom, a similar plan (called Personal Accounts) should enter into force in 2012. In Canada, the Netherlands and the United Kingdom, private savings currently accounts for about

40% of retiree income, against almost 30% in Denmark and 15% in Germany, but only 8.6% in France.

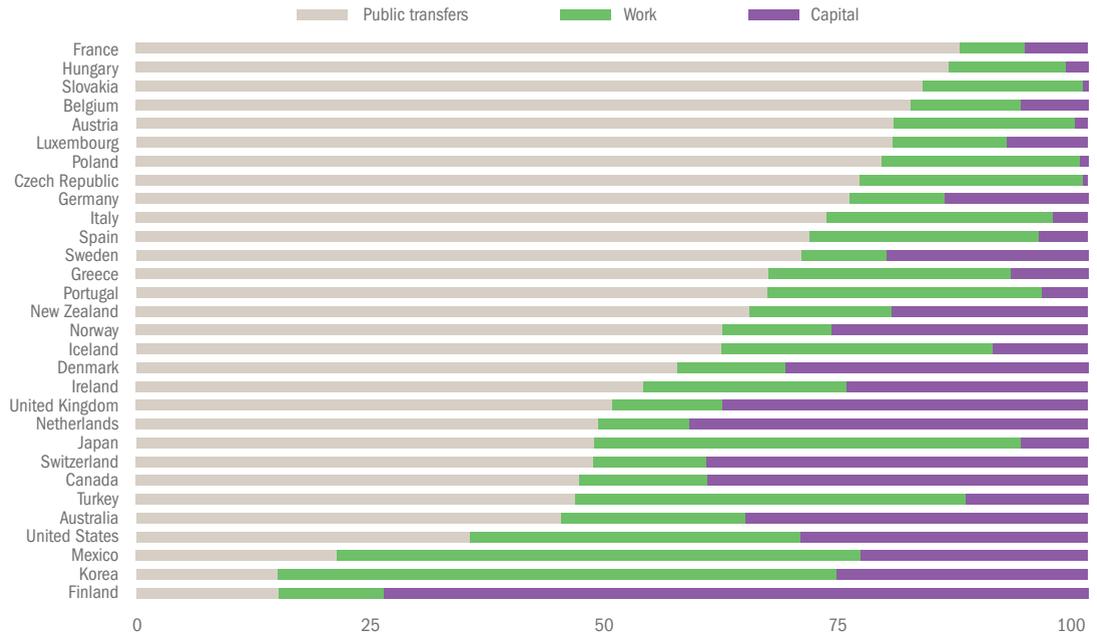
### 3.2 – Impact of the crisis

What was initially a financial crisis has become an economic and social one, exacerbating the structural problems confronting pension systems. In many countries, the evolution of financial markets has had major repercussions on private pensions.

#### The pension funds situation

Prior to the crisis, many European countries saw the development of funded retirement schemes as a solution to the foretold decline of public pension plans. Although not threatened, funded pension plans are now subject to a more prudent approach. Indeed, after accounting for inflation, the actual yield of pension funds declined by an average of 17% in the

## INCOME SOURCES, POPULATION OVER AGE 65



Note: Income from work includes both earnings (employment income) and income from self-employment. Capital income includes private pensions as well as income from the returns on non-pension savings.

Source: OECD Income-Distribution Database, mid-2000s.

23 OECD countries (source: OECD 2009). The sharpest drops were observed in Ireland (37.5%), Australia and the U.S. There was a smaller decrease of less than 10% in Germany, Slovakia, Czech Republic and Mexico. The differences in investment yields are explained by the contents of the pension fund portfolios. The loss was greatest in countries whose funds were invested primarily in stocks (United Kingdom, the U.S, Australia) and more limited in countries like Germany where investments were mainly in bonds.

On an individual level, some people have lost a not-insignificant part of their retirement savings, which were invested in pension plans or other financial assets. In spite of this, private pensions are likely to continue to increase in importance in the coming years (source: *Revue Constructif*, February 2010).

CANADA, THE NETHERLANDS  
AND THE UNITED KINGDOM,  
PRIVATE SAVINGS CURRENTLY  
COUNTS FOR ABOUT 40%  
RETIREE INCOME.

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THE ACTUAL YIELD ON PENSION FUNDS  
DECLINED BY AN AVERAGE OF 17%  
IN THE 23 OECD COUNTRIES.



### Recent reforms

In the past few years, particularly in response to the economic and financial crisis, the OECD countries have actively continued to reform their pension systems. This is the case of France. Nonetheless, these reforms are more evolutionary than revolutionary. That being said, they are everywhere proving to be politically difficult to implement. Will they suffice to ensure the sustainability of pension systems? It all depends on reforms already achieved. It is expected that other adjustments will be made to financially stabilize the pension schemes while endeavouring to maintain an acceptable standard of living for future retirees.

Elsewhere in the world, the question is also posed with acute concern. The World Bank, whose mission is to help countries develop economically, has dealt with pension policy while working with many countries in Latin America, Central and Eastern Europe, and the countries of the former Soviet Union. In practice, the World Bank has taken a multi-tiered approach, similar to that followed by the OECD countries: a mandatory first tier that is pay-as-you go and publically managed; a mandatory second tier that is fully funded and privately managed; and supplementary schemes that are fully funded, voluntary and privately managed.

In Lithuania, the World Bank has helped establish a first tier, financed on a pay-as-you-go basis, whose goals are essentially redistributive. The implementation of a second tier remains open. A similar approach is advocated for a pay-as-you-go scheme in Bulgaria, a new scheme in the Republic of Korea and one in Thailand. In Latvia, reform takes the form of pay-as-you-go notional accounts together with a supplementary funded pension plan. In Hungary and Poland, a mandatory funded pension plan will stand for about a third of the total system. In Kazakhstan, reform led to the replacement of a pay-as-you-go scheme by a funded pension plan. Lastly, a similar approach is advocated in Bolivia, Peru and Mexico, while reform projects in Argentina and Costa Rica are centred on a two-tier approach. Nonetheless, whatever the country, it remains true that certain non-systemic risks are impossible to mitigate through diversification (*source: Revue internationale de Sécurité Sociale, 2000*).

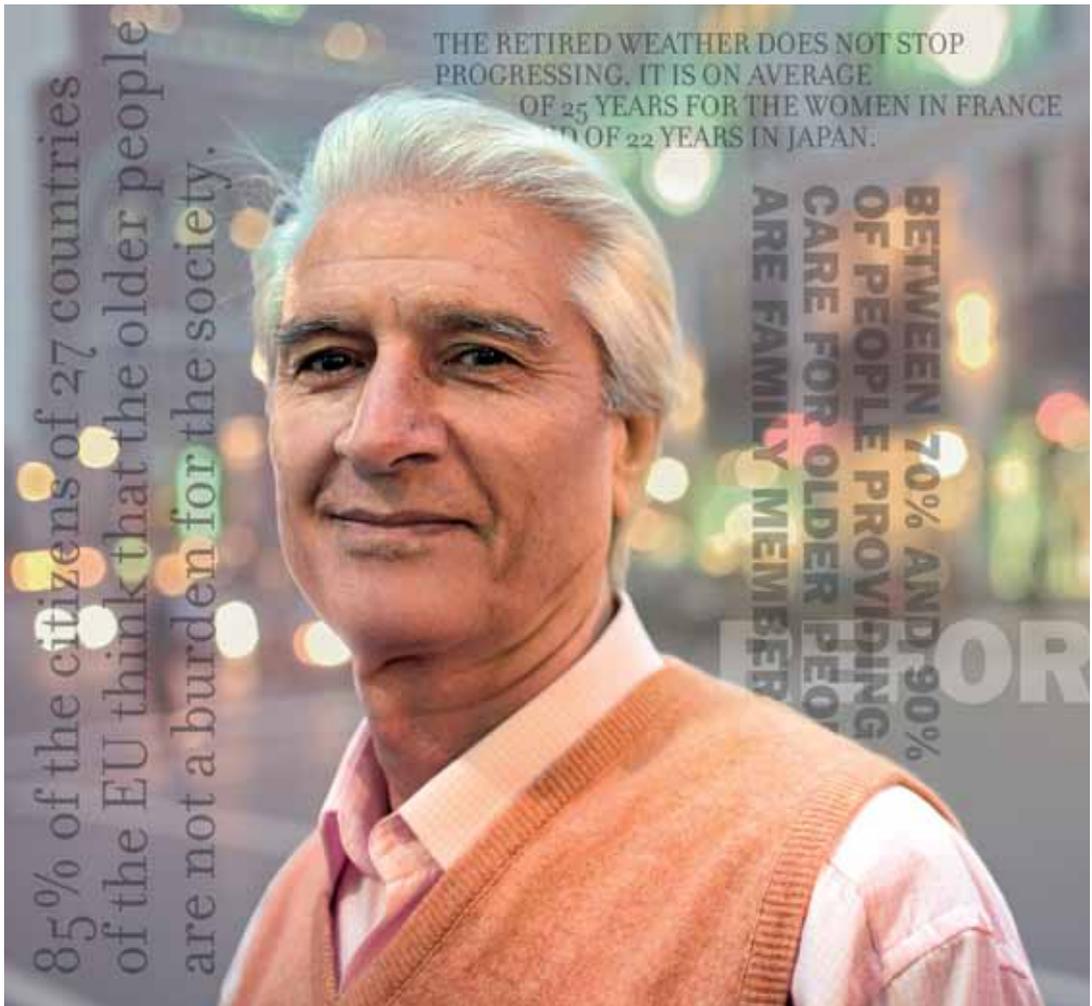
### 3.3 – The emerging choices of society

In the last two decades, to meet the challenge of ageing populations, most countries have started to reform their pension systems. However, under the impetus of the financial and economic crisis, the rate of change has accelerated.

The crisis, initially a financial one, began by having a powerful impact on private pension plans, with the collapse of stock and real estate prices leading to a brutal contraction of assets value. The impact was all the greater as the plummeting of share prices occurred at the very moment baby-boomers were retiring from the workforce. The economic and social crisis that followed worsened the financial state of public pension systems, as the rise in unemployment and stagnation of salaries automatically led to a decline in employee contributions.

In any event, although recent years have brought a broader understanding of pension reform and the ageing of the population, this knowledge is still incomplete. The difficulties faced by all pension schemes today make it necessary to go farther in the analysis of systemic risks, to ensure the reforms undertaken will lead to a successful and sustainable social and economic future. New social phenomena are emerging, and it is useful to see how they might impact the well-being and standard of living of future pensioners. For example, whilst the increase of the divorce rate has repercussions on the income available at retirement, the decrease in the widowhood rate, particularly for women, opens new perspectives. In spite of a growing number of divorces, there is a tendency for an increasing number of elderly couples. In 2030, persons over age 85 will be three times as likely to be part of a couple than in 2000 (*source: Joëlle Gaymu, Gérontologie et société, December 2008*).

Beyond the issue of achieving a financial balance for pension schemes, it is ultimately a choice of society that is being made. This choice is emerging around the universal need for equity and justice, which are essential for sharing the efforts required from each person, rich or poor, young or old, man or woman.



#### Research and education for risk reduction

The issue of the ageing of the population and pensions is at the heart of the insurance business. A long-term business, the protection of persons and assets is a stabilising factor for society as well as a source of comfort for our customers. AXA must therefore have a forward-looking vision to gauge what the future will bring and find sustainable solutions. Our responsibility as a company is inseparable from our business activity, and is based on our unifying theme: “research and education for risk reduction”.

To better understand these phenomena, the AXA Research Fund devotes a portion of its finances to the prevention of risks that threaten human life, in order to improve the well being and quality of life of current and future generations. In particular, it supports work in the fields of longevity and dependency (mechanisms and causes of longevity; costs and financing of dependency; well-being and quality of life for the elderly, etc.). Researchers worldwide are actively participating, and university chairs whose work is focused on issues concerning the increasing lifespan have been established at the University of Newcastle in the United Kingdom, and the Ecole Polytechnique and the Université Paris Descartes in France.

[www.axa-research.org](http://www.axa-research.org)

The concerns  
of active workers  
about retirement.



5<sup>TH</sup> AX  
RETIREMENT PE.  
EXAMINATIONS AND  
31,539 PEOPLE  
QUESTIONED, 26 COUNTRIES.

31,539  
PEOPLE  
26  
COUNTRIES

ARE THERE DIFFERENCES  
BETWEEN THE GENERATIONS

## 4. VIEWS ON RETIREMENT AROUND THE WORLD

*How is retirement viewed in Spain, the U.S. or Thailand?*

*How does one prepare for it? Are there differences between the generations?*

In Spring 2010, AXA carried out an international study designed to examine and understand the attitudes of the population about this particular period of life.

Organised by the GfK Group, European leader in the area of international surveys, the 5<sup>th</sup> AXA Retirement Scope covered 26 countries, 31,539 people—workers and retirees—from all social strata, who were questioned about their situation, habits, consumption,

financial and health-related plans, leisure activities and even equipment in new technologies. The international dimension of the study brought out the disparities and similarities that exist between populations that are culturally close or distant; it also revealed the main trends that characterise the retired population, and underlined the concerns of active workers about retirement. This rapid round-the-world tour of views on retirement brings an additional light to the preceding analyses and forecasts.

## Western Europe

### Germany

#### Rational and responsible

Germans take a pragmatic, responsible approach to retirement. Since they want to continue to retire relatively early, they methodically save and prepare.

Aware that their pension system is deteriorating, Germans know that they will need other sources of revenue than just their state pensions. 45% of 25- to 34-year-olds believe their pensions will be mainly based on their savings and investments. Fairly optimistic, 56% of Germans believe their revenue will be sufficient (50% of the youngest people). 69% would be willing to make an additional effort for retirement through increasing their savings and personal investments (44%) rather than seeing a rise in mandatory contributions.

#### What preparation?

Very well informed about the level of their future income, 48% of workers began to prepare for retirement at 32 years of age, and 34% say they think they will do so starting at age 48. Already, half of all working-age people and four out of ten retirees regularly save and invest in real estate, banking insurance products.

### Belgium

#### Ready for change

Long convinced of the value of saving, Belgians are smoothly adjusting to the evolution of their pension system. Although the crisis has slowed down the process of preparing for retirement, young workers and those in their forties show themselves to be strongly involved.

Much more optimistic than their European neighbours, Belgians still plan to retire at 60 (before the legal age of 65), undoubtedly because they believe they will have sufficient resources to do so. The younger generations

are nonetheless conscious that they cannot entirely rely on retirement funds to finance their retirement, as their elders did. If they have to choose, Belgians prefer to make an additional financial effort rather than work longer.

#### What preparation?

The population appears ready to calmly manage the transition to a new model of retirement financing. Backed by a culture of saving and supported by an incentivised tax policy, two-thirds of the active population has already started to build up a nest egg. The decline of the pay-as-you-go pension scheme has only accelerated this awakening. Young workers and those in their forties are preparing to finance at least part of their future retirement income by themselves.

### Spain

#### A hot topic

The debate on pensions has started in Spain, and it's a very hot topic indeed. Until now, Spaniards were passive about preparing for their retirement, but now they have finally become involved.

A plan to increase the minimum retirement age from 65 to 67 is going poorly. 74% of active workers are opposed, even though they think they will retire at 64 years, after all. Their opinions regarding their future income are polarised. 49% of active workers believe they will have enough income. The most pessimistic are the 25- to 34-year-olds, of whom only 37% think they will have enough. People in their forties are divided, with 48% judging that their income will be insufficient. Only older workers still consider themselves to be protected by the current system.

#### What preparation?

75% of active workers do not know how much their retirement will be—and only 29% have begun to make arrangements for it. Harshly affected by the crisis and suspicious of financial institutions, Spaniards need liquidity and are still delaying preparing for their

retirement. Nonetheless, among the youngest workers, 34% believe their income will come mainly from their own savings and investments.

## Portugal

### Pessimistic

With little confidence in the ability of their pension system to provide a sufficient income, Portuguese are still hesitating to take the plunge and prepare for retirement.

Aware they will have to work longer, the Portuguese expect to retire starting at age 65 and no longer at age 63, as is the case today. Active workers are even convinced they will have to retire 7 years later than current retirees. Very worried about their income, they are among the least confident in the panel. Beyond structural phenomena, the impact of the economic crisis has really made itself felt, with one Portuguese out of five already having reduced his savings.

#### What preparation?

The idea is gaining ground that each worker will have to finance some of his future income by himself. Portuguese prefer to make an additional financial effort during their working life rather than postpone retirement. In practice, they still remain heavily dependent on public pensions (71%), much more so than the average in Western European countries (53%). And only 20% of them know the amount of their pension. Nonetheless, encouraged by government educational campaigns, 40% of active workers say they have begun to prepare.

## France

### Pessimistic—and irrational

Although the French fully expect to see their income decline on retirement, they remain conservative in their savings and investment strategy.

In 2004, 45% of the French expected to have sufficient income on retirement. In 2010, more pessimistic, only

38% believe this, of which only 29% know the amount. Although they sense the decline of the welfare state, they are still counting on it, even so far as delaying the preparation for retirement. Moreover, over 50% of active workers do not want the retirement age raised—even though they believe it is inevitable.

#### What preparation?

For the French, the solution is to be found in savings, either private or with constraints. In France, the “cultural foundation” of savings remains very traditional; for most people, this involves savings accounts (over 95%) and life insurance (over 48%), while investments in real estate and financial assets are used by wealthier people who seek to establish lifetime income. Transmission is also an essential criterion in the choice of product, particularly for the youngest. That said, active workers and those in their forties are beginning to become aware they need to diversify their savings—an awareness dictated by fear of the future.

## Italy

### More optimistic and more realistic

The recession has changed the behaviour of Italians, prompting them to increase their savings. As a result they appear to be confident in their ability to supplement their future income.

Retirees are more satisfied with their income and active workers are less worried in 2010 than in 2007. But none are truly getting prepared. The few who are taking action are doing so earlier than in other Western European countries (at age 30, versus 34 on average). Italians also do not foresee working longer to provide sufficient income; they are indeed very opposed to raising the retirement age. In practice, most workers retire today at the legal age (62 years), while the average retirement age is 58.

#### What preparation?

The economic recession has already prompted Italians to save more: an average of 5,857 euros per year

per active worker (second place behind the Americans) and 4,581 euros per retiree (third place behind the Americans and the Japanese). Above all, they are diversifying their investments. While current retirees mostly still have confidence in the public system, young workers and those in their forties understand that it won't provide sufficient income.

### **Luxembourg** **Times are changing**

Still broadly confident that their public pension system will provide their income, Luxembourgers are changing, pushed by a younger, more proactive generation. Like other Europeans, Luxembourgers often retire before the legal age, on average towards 58-59 years, instead of the official age of 65. Opposed to raising the retirement age, they nonetheless declare themselves ready to accept this; they also would accept an increase in contributions to maintain the current system. In a country where the latter provides the bulk of income for retirees, the population generally believes that financing solutions will come from the state rather than private initiatives.

#### *What preparation?*

Although they are unaware of the amount of their future retirement income, two out of three workers and nine out of ten retirees believe it will suffice to live on. As a result, they do little to prepare for retirement, or only do so at a certain age to boost their income, build retirement assets or benefit from tax advantages. Young workers, more concerned than their elders by the decline of the current pension system, are preparing earlier and appear to be more open to voluntary saving and investment initiatives.

### **Switzerland** **Happy and far-sighted**

If the Swiss face retirement with confidence, it's because they have long been in the habit of saving to ensure a comfortable income. Only the younger generations are more concerned about the future.

In Switzerland, retirement is seen in much more positive terms than in most countries in the panel. Confident in their pension system, three-quarters of active workers believe their income will be sufficient. They are very well informed about the amount of their future pension. As to the retirement age—62 years on average—there is no real debate, even if the younger generations would like to retire earlier. They are also the only ones to express their concern about the future.

#### *What preparation?*

Confident and far-sighted, the Swiss have long known they must save for retirement. The amounts saved each year are the highest in the panel: from 10,000 Swiss francs for retirees to 11,000 francs for active workers, with investments well diversified among banking products and insurance products. But the crisis has delayed retirement preparation among active workers. Only 41% have begun to do so, against 63% in 2007.

### **Great Britain** **A time of uncertainty**

The crisis has significantly changed the way the British view their retirement. They now expect to retire later and under uncertain financial conditions.

The British are becoming used to the idea of retiring four years later than their elders, without knowing what their income will be. This is true for more than half of older workers. Although 58% of retirees today depend on pensions paid by the state, only 28% of active workers believe this will be the case for them. It is therefore through their savings and investments

that they can ensure their income. 12% of retirees do that already; 45% of active workers believe they will be forced to do so.

#### *What preparation?*

In spite of the uncertainty, the British show themselves no more far-sighted than before. Less than half of active workers today save for retirement, a much lower rate than in 2007. When asked what would push them to react, no particular event stands out. Great Britain is indeed the only country in Europe in which the decline of the pension system is not seen as an incitement to prepare for retirement.

## Eastern Europe

### **Hungary**

#### **The dawn of awareness**

Hungarians, who retire much earlier than most Europeans, are ready to become more involved in preparing for it.

Hungarians have a rather gloomy view of retirement and fear having to work longer to ensure sufficient income. Their fears are well founded: in 2009, the legal retirement age was increased to 62, generating opposition from eight out of ten Hungarians. Currently, the effective retirement age is an average of 53 years, well below the European average. But 60% of recent retirees have voluntarily opted for early retirement to avoid unemployment.

#### *What preparation?*

Perhaps reassured by the recent pension reform, Hungarians continue to think that the state will help them. But the idea that one can also save voluntarily to supplement one's retirement is gaining ground. Logically, it is the youngest workers and those in their forties who show themselves to be the most open and most involved in preparing for their retirement.

### **Czech Republic**

#### **More concerned and more far-sighted**

Affected by the reform of their pension system, Czechs know that will undoubtedly have to work longer and save more to ease their old age. They are actively preparing for it.

In 2010, like in 2007, most Czechs retired at 57, well before the legal retirement age of 62. With the reform of their pension system, active workers believe they will probably have to work until age 64, even though they are opposed. Whilst they approach this phase of life in positive terms, they are concerned about its financial aspects. For them, retirement marks the beginning of financial problems or at least of budgetary constraints. 93% of active workers believe this has to be planned for.

#### *What preparation?*

Czechs are in a state of uncertainty and are rather pessimistic—particularly as they don't know how to calculate their pension income. In this state of mind, many Czechs have begun to prepare themselves. This is the case for three out of four active workers, and especially those in their forties. Only one current retiree out of two did so during his working life. Today, the youngest workers and those in their forties are clearly counting on their personal savings.

### **Slovakia**

#### **Actively preparing**

Uneasy about what the future will bring, Slovaks, like most Europeans, are resigned to working longer than earlier generations.

The Slovaks are fairly pessimistic themselves; more than other European citizens, they expect they will not have enough income at retirement. In 2009, the legal retirement age was raised to 63, but the real retirement age is an average of 56. Nonetheless, the younger generations already envisage retiring after the legal age. Many among them believe they will remain active in the workforce or in the community at the time of retirement.

*What preparation?*

To supplement their future revenue, the Slovaks say they are very much in favour of enterprise-based savings and pension schemes. This trend is particularly marked among the young, only 18% of whom believe their main source of income will be the public pension system. Finally, active workers are more numerous than average in Western countries to have begun to prepare for retirement, particularly the most well-to-do amongst them.

**Poland****Poorly informed, poorly prepared**

Poles may well have a pessimistic view of retirement, but they hesitate to prepare for it, perhaps because they are insufficiently informed.

Retirement is seen as a period when one can take care of oneself and one's family. Yet retirement also goes hand-in-hand with risk: the risk of seeing one's standard of living, health and social status deteriorate. On average Poles stop working at age 57, but unlike elsewhere in Europe, they are tending to retire younger and younger. Poorly informed about the mechanisms that govern their retirement schemes, they are unaware that an increase in the retirement age is inevitable. Moreover, they are opposed to it.

*What preparation?*

Without having a precise idea of what their future income will be, they assume it will not be enough. Only 21% of active workers are confident that it will. Most Poles leave it up to the public pension system. Even though young workers and those in their forties believe that savings and private investments will be the best way to increase their future revenue, few are taking action. 25% of active workers say they have done nothing, which puts Poland in last place in the panel.

**Southeast Asia****Thailand****Help yourself, and the state will help you**

Attitudes are changing in Thailand, which is facing an aging population. Active workers and young generations alike know they will need to count on their own savings to help finance their retirement.

Thais have shown overwhelming support for voluntary early retirement in the past few years, and in general stop working around age 57. More than half of active workers and retirees questioned say they are opposed to increasing the retirement age. But the population is ageing: the elderly is the fastest growing age bracket, rising at a rate of 50% in the next decade, compared to 6% for other age brackets. Active workers and retirees alike have an ambivalent view of retirement, which is synonymous with free time, but also with uncertainty about the future.

*What preparation?*

Almost 65% of active workers and 45% of retirees doubt that their retirement income will be enough to live on, yet they start thinking about it relatively late. Active workers start preparing at age 40, while those already retired did so at age 50. Although retirees believe that the state is responsible for providing a decent income, active workers, particularly the youngest, are more conscious of the need to build up individual savings. Government communication campaigns are encouraging them to do so.

## Singapore

### Retire early, but well prepared

Singaporeans retire early and plan to continue to do so. They start preparing fairly young.

Pragmatic, Singaporeans have a positive view of retirement, while being convinced that financial preparation is necessary. A significant proportion of active workers and retirees do not know how much they will receive (under 40% in both categories) and opinions are divided as to whether this income will be sufficient or not (40% positive views, 60% negative views). Overall, Singaporeans are confident in their pension system and in the performance of their investments. In keeping with this, a majority is opposed to raising the retirement age: almost 60% of retirees already stop work before the legal age.

#### *What preparation?*

Half of Singaporeans have begun preparing for retirement, with, however, some differences. The youngest do not seem to be in a hurry, while workers nearing the end of their careers believe it is already too late. On average, active workers today begin preparing at 31 years, while retirees did so at 41. In any event, this is earlier than most countries in the panel.

## Malaysia

### At the verge of awareness

Amidst the world financial crisis, the media have made Malaysians aware they will need to find supplementary income for retirement. Nonetheless, many get started very late.

Certainly, retirement means having more time for oneself, but what about the difficulties that may arise if there are health problems or a more limited income? On average, Malaysians retire at age 54, or earlier than the average Southeast Asian or even European resident. But Malaysians are also the most favourable to raising the retirement age—and are pressuring government authorities to do so. Several

factors are involved: an increase in life expectancy and in the cost of living, and low pensions paid out by companies.

Although half the population knows approximately how much income they will have on retirement, pessimism is the order of the day. Only 37% of active workers (against 62% in 2007) think it will be enough. Malaysians working in the private sector are therefore looking for individual solutions, while civil servants are still counting on the government to reform the system of mandatory contributions. In spite of everything, 80% plan to start preparing their retirement only after age 46.

## Indonesia

### From one world to the other

Indonesia is the Asian country where workers retire earliest. But even if current retirees rely on the public pension scheme to preserve their level of income, new generations are preparing to supplement their future pensions by themselves.

Indonesians are the youngest retirees in Asia: they retire on average at age 52, i.e., eight years before the legal age. This trend was strengthened in recent years with an increase of early retirement. In a country where the family is very important, early retirement means being able to devote more time to one's loved ones. But Indonesians—particularly those with the lowest incomes—are worried about the financial difficulties that await them. They are seriously concerned about their future income and doubt the ability of the government to provide sufficient pensions for all retirees. More than any other active workers in Asia, Indonesian workers are convinced they must prepare financially and rely on their own initiative to protect their standard of living. However, current retirees still believe it is the government's responsibility to take the necessary measures to sustain the level of pensions paid.

## Philippines

### Early retirement but late preparation

Filipinos stop work early and prepare late for retirement, but they know the arrangement can't last.

Filipinos retire early—on average at age 53—most of them encouraged by Filipino enterprises that have used early retirement to blunt the shock of the economic crisis. Recently, retirees have even stopped working at age 51. Although Filipinos retain a mostly positive view of retirement, their optimism is tempered by the fear of financial difficulties that would lower their standard of living. Active workers are more uneasy about this than are their already retired elders. On their side, retirees suffer more from lack of social recognition.

Today, the great majority of Filipinos plan to work longer and to rely primarily on themselves rather than on governmental measures. At the moment, employer-financed pension schemes continue to provide the majority of pensions; active workers hope that this situation continues. Aware of the financial difficulties awaiting them, Filipinos, like the Chinese and Indians, are nonetheless late in reacting: on average, they begin to prepare financially only at age 48, virtually just before their retirement.

## Australia

### Contribute more to save the public pension system

Australians are attached to their pension system and are willing to contribute more rather than to save more. Although the official retirement age is set at 58 years, the average age has dropped from 63 to 57, due to a significant rise in voluntary early retirement. In this regard, Australia is in second place after the U.S in the panel. In practice, Australians are allowed to retire between age 55 and 65. Moreover, retirement legislation is attractive, and enterprises are rather generous in their early retirement packages. But the crisis has changed things.

### What preparation?

Active workers today expect to work until age 64; only half of them believe they will have sufficient income on retirement. Although the Australians are among those who do the most to prepare during their working life, this preparation is essentially passive, as it involves mandatory contributions to the Australian Superannuation fund. Moreover, rather than saving or investing more, active workers and retirees prefer that the government increase these mandatory contributions to finance their retirement.

## North America

### United States

#### In times of uncertainty, count on yourself

Accustomed to pulling themselves up by their bootstraps without expecting much help from the government, Americans are facing the consequences of the crisis.

Among Americans, the pension question is generating uncertainty and concern. Half of active workers associate this period with financial problems, which is confirmed by many retirees. Active workers therefore expect they will have to work longer than their elders, or until age 64 instead of 57. Above all, they know they will continue to have to work and save if they want to ensure a comfortable retirement. But six out of ten Americans cannot estimate their future income, because it will depend on their savings and on the performance of their investments. Nonetheless, a majority of workers (57%) today say they are confident. This is the case for 89% of the well-to-do, but much less so for those with the most limited income.

### What preparation?

Americans understand that they have to rely more on their own savings and investments. They are willing to save more, particularly the younger generations, and prefer this approach to that of increasing the

retirement age. In a country where self-sufficiency is the cultural norm, Americans intend to maintain control of their future. Well informed about financial products, they remain confident of their ability to assure a good level of income by themselves. As proof of this, the savings rate increased during the recession.

## Canada

### Watchful, and wait-and-see

Canadians are aware of the issues around retirement, yet struggle to draw the relevant conclusions, as they lack key information needed to know precisely the amount of their future income.

Canada remains one of the countries where retirement is viewed positively and optimistically. The fact that many Canadians stop working before the legal retirement age undoubtedly contributes to this outlook. Nonetheless, Canadians expect to stop working later than previous generations, although they still hope to do so before age 65. On the other hand, everyone understands they must prepare for their retirement.

#### *What preparation?*

Canada has the highest concentration of workers who are actively preparing for retirement, and they do so early. Although Canadian workers consider individual savings as a secure method for guaranteeing enough income, fewer than 30% believe savings will be their principal source of income on retirement. An equal percentage of retirees has the same opinion, noting out that if they were to do it over, they would save more. For now, although Canadians seem to be aware of the issues, they still need to act accordingly.

## Asia

### India

#### More reactive than proactive

Indians are willing to work longer to protect their income as well as their social status, even beyond the current legal limits.

Indians have a positive view of retirement. Aware that this period can ultimately bring problems of health or dependency, they realise nonetheless that it requires some financial preparation. Workers are willing to stay on the job longer to protect their standard of living but also—indeed most of all—their social status, to which Indians, more than others, are sensitive. 61 years of age (i.e., three years more than the legal retirement age) is considered to be ideal for stopping work; however, this age can be pushed back. It is understood that one may be productive well beyond the limit set by law.

#### *What preparation?*

Three out of four Indians have a fairly precise idea of their future pension income, and over half believe this revenue will be enough. But the degree of preparedness varies according to the generation. Almost 60% of current retirees began to prepare for their retirement during their working life. In contrast, more than half of today's workers have not yet started.

### Japan

#### No future?

Japanese are pessimistic; the young are even very pessimistic. In Japan, there is a real divide between current, rather privileged, retirees and the younger generations, who foresee a bleak future.

Japanese society is undergoing profound structural changes: the population is rapidly aging, and the days are gone when people worked their entire life in a single company. Pessimism is the order of the day: only 11% of Japanese believe their income will suffice;

this figure drops to 3% among 25- to 34-year-olds. Moreover, the rift is growing between the younger generations who are worried about the future and have little confidence in the government, and older people who are opposed to any increase in contributions or in the retirement age.

#### *What preparation?*

Retirement means poverty, illness and dependency. Worse, for active workers, one is considered old at age 56. Young people and those in their forties therefore believe that they will be old when they retire. The deeply rooted idea that one must prepare for retirement has not yet taken the form of action. There is nonetheless a strong savings culture: seven out of ten people questioned said they save. Japanese start to save as soon as they first enter the workforce, diversifying their investments and saving significant amounts.

## **China**

### **New expectations**

Conservative in their approach to financing retirement, the Chinese are aware that their country's accelerated development makes their future more uncertain. The youngest have understood this and are open-minded as regards new habits for saving and investment.

Chinese are optimistic about their future retirement. In 2008, the country adopted a New Labour Act, which enables more of them to retire at the legal age (60 years for men and 50 for women). In the field of social protection, China has also tested a new health insurance program in rural regions.

#### *What preparation?*

Most Chinese believe their income is or will be sufficient, although many of them think they will have problems. The Chinese pension system is far from perfect. The rise in prices, increase in health expenditures and a stressful lifestyle all contribute to an uncertain climate. At the same time, the Chinese have become more demanding about their investments.

It is no surprise that it is mostly the new generations who believe their savings will play a major role in their future income, while current retirees are counting on increased pensions. Whilst they prepare for retirement late in the game, all are careful and conservative in their investments.

## **Hong Kong**

### **Saving and investing to enjoy retirement**

Accustomed to retiring early, inhabitants of Hong Kong know they must prepare if they want to enjoy retirement without giving up on their quality of life.

The trend is for early retirement, with an average age today of 56. Two-thirds of current retirees retired voluntarily and most residents stop work before the legal age draw to pensions paid out by mandatory pension funds. Certainly, young people suspect they perhaps will not have that chance, but nonetheless say they would like to retire at age 55. Very attached to their work/life balance, young people from Hong Kong fully intend to enjoy life without waiting until they are too old.

#### *What preparation?*

Better informed than before about the issues of preparing for retirement and the amounts they are likely to receive when they stop work, Hong Kong workers understand the importance of planning ahead. Today, more than in the past, most workers are counting on their personal savings and investments to supplement their retirement income.

## North Africa

### **Morocco**

#### **Preparing early for a difficult phase**

Even if they expect insufficient income, Moroccans do not want to work longer to finance their retirement. They prefer to count on the government, or, in the case of younger workers, their savings and investments.

Moroccans are unsatisfied with their retirement income but are nonetheless opposed to the idea of working longer to improve it. In general, they stop work at age 58, or two years before the legal age. Surprisingly, the younger the worker, the earlier they plan to leave. But in practice, the trend is for an increasingly later retirement: 78% of Moroccans today wait until the legal retirement age to stop work, with early retirement becoming the exception.

#### *What preparation?*

Public pensions are the main source of income for Moroccans when they retire. For this reason, they favour governmental measures to sustain the system, including an increase in contributions. The youngest are open to the idea of private savings or investments. A very large majority of Moroccans say they have prepared or are preparing for retirement during their working life. Morocco is the country where this preparation starts the earliest—on average by age 27!

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If, despite our best efforts, there are any errors or inaccuracies in this paper, we beg your indulgence.

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