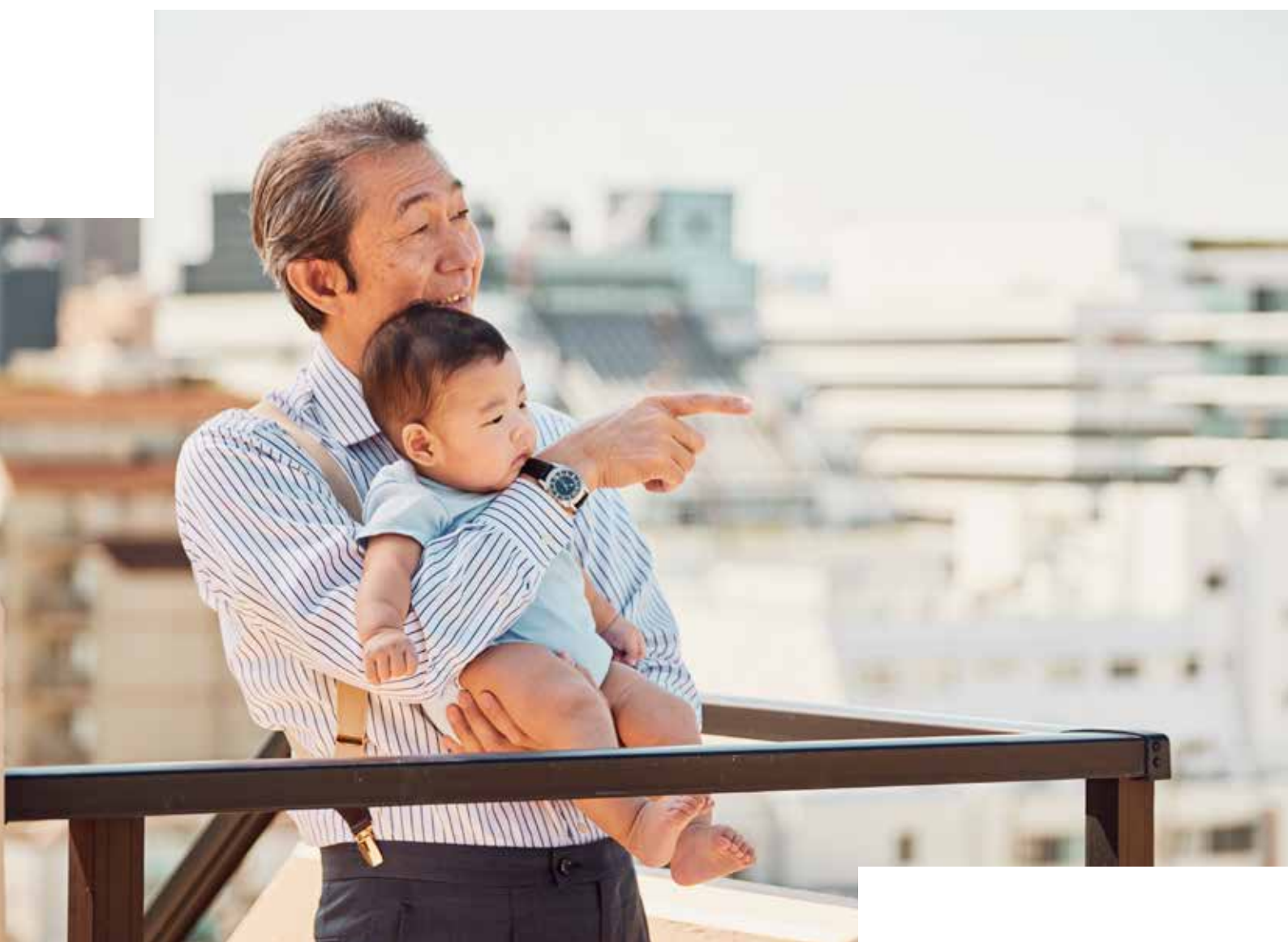


Research Institute

Rethinking retirement



Thought leadership from Credit Suisse and the world's foremost experts

Editorial

Retirement has become an integral part of our life biography: after education and years of work comes well-deserved rest. Many people tend to take this rigid three-stage structure of life for granted, as if it had been in the nature of every human being for a long time. What is often forgotten, however, is that the concept of retirement as a formally defined end of working life only came into being in the 19th century, when the first forms of financial support for the elderly, funded by the state, were introduced. Until then, lifelong work had been a reality for many generations.

Today, increased life expectancies mean that we can remain active for longer and that the rising imbalance between retirement and working life will be a problem for an increasing number of people and economies in the long term. In turn, the transition to more flexible working models means that rigid employment careers are no longer necessarily the rule. In other words, 21st century lifespans and changes in how we learn and work are creating the space for even more life stages to emerge.

Current data on effective retirement ages and labor force participation of older people show that a shift toward a later exit from the labor market is actually already taking place at least to some extent in most developed economies. However, there are still obstacles due to the structure of retirement systems or the mentality of employers and employees. Interestingly, in developing countries, where the three-stage lifecycle has not been as predominant, attitudes toward work beyond retirement age are often much more open than in the developed world, not only due to financial needs when pension coverage is low, but because people in these countries have been less accustomed to retirement as a work-free stage of life.

To maximize the advantages of a longer life, both education and traditional career paths need to be reconsidered. Retirement systems need to be sustainable and respond to the needs of a changing society. To disarm the demographic “time bomb” and unlock the longevity dividend, we need to rethink retirement.

We hope that our findings will prove valuable and I wish you a most insightful read.

Urs Rohner

Chairman of the Board of Directors
Credit Suisse Group



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Introduction

The reality of aging societies

Rising life expectancies and falling fertility rates have led to aging societies becoming a reality in many countries across the globe. What has so far primarily been an issue in developed countries is also becoming a concern for the developing world. Sooner or later, governments worldwide will have to address questions associated with aging societies: how to ensure financial security for a growing number of retirees and how to establish a sustainable pension system for future generations. Unfortunately, policymakers are increasingly facing opposition to reforming pension systems.

Therefore, many countries have delayed the debate about the adjustments needed to solve this imminent crisis. However, the longer the debate is delayed, the more difficult it will become to reverse the negative consequences of postponement. Developing countries have the opportunity to learn from the failures of developed countries, allowing them to “directly” implement meaningful measures that have proved to be successful. However, fast action is also necessary in this part of the world as population aging is unfolding at a much faster pace than in developed countries.

Age as a multidimensional indicator

To address the demographic challenge, a variety of levers must be set in motion. Countries not only need regulatory measures (e.g. an increase of the normal retirement age), but also a different understanding of age as a multi-dimensional indicator. Chronological age, for instance, is the most widely discussed unit of measurement when debating an increase in normal retirement age. However, chronological age fails to capture information about the well-being of an individual. Basing normal retirement age on a universal and rigid threshold would therefore not live up to the multidimensionality of age and possibly cause inequality between healthy and less-healthy workers.

Rethinking retirement

Our society needs to rethink retirement. We should reconsider the traditional concept of the three-stage lifecycle – education, working life and retirement – and increasingly make provision for new forms of work (e.g. part-time or temporary employment) and further education that can ease the transition into a longer working life. At first glance, the idea of a longer working life may sound exhausting. However, allowing for more flexibility can help workers to reconcile work with investments in relationships and health.

Workers have the opportunity to shape their own working lives in accordance to their needs. Thus, allowing for more flexibility during an extended working life can help an increasing share of workers to unlock a longevity dividend or, more generally, to regard the additional years as a gift rather than a burden. At the same time, governments should provide support for old-age workers who are unable to work for longer.

More flexible working models

This transition will, however, be accompanied by new challenges, especially in conjunction with employees opting for more flexible working models. Some of these non-standard workers are exempt from enrolling in earnings-related pension schemes that are mandatory for full-time employees. Alongside frequent job changes and relatively short employment tenures, non-standard workers run the risk of having lower old-age incomes. This suggests that many pension systems are still too rigid to respond to the needs of a changing society and will have to become more flexible to cover a wide range of different cases.

The Credit Suisse Progress Barometer Survey 2019/2020

But how do people directly affected view these developments and what expectations do younger generations have for retirement and life in old age? Based on the Credit Suisse Progress Barometer Survey 2019/2020, we have assessed the attitudes toward retirement of a broad range of people in 16 countries worldwide.

Overall, the survey results show growing concern about the quality and sustainability of social security. Almost half of the respondents in both developing and developed countries feel insecure about whether they will have enough money to live comfortably throughout their retirement years.

Working beyond retirement

In this context, younger cohorts generally expect retirement provision to be less important as a source of income than older generations and see income from work more and more as their savings plan for the future. Overall, respondents in developing countries wish to continue working after reaching normal retirement age more often than their counterparts in developed countries. The results may illustrate the need for people in developing countries to work beyond retirement because existing pension schemes provide little or no financial support at old age. At the same time, people in these countries have been less used to retirement as a work-free stage of life.



1. Aging societies and the retirement wave

People are getting older by the decade. Both developed and developing countries will face the problems associated with an aging population. While developed countries are seeing the impact first, the developing world will go through this process at an even faster pace.

A changing demographic profile

The global population has seen staggering growth over the past 200 years. In the early 19th century the one billion mark was reached, and after that it took only around 120 years to reach two billion in the 1920s. By 1994, the global population passed the six billion mark and, in 2019, it totaled roughly 7.7 billion. In the coming years, the world's population will further increase – even though it will not see such rapid growth as in previous decades (United Nations, 1999, 2019).

However, the regional distribution of demographic growth will shift in the coming decades. By 2050, more than half of the projected population growth will occur in nine countries, of which more than half are located in Africa¹. Meanwhile, Asia and especially Europe will make up an ever-smaller fraction of population growth. By 2030, the contribution of the Old Continent will likely turn negative (**Figure 1**).

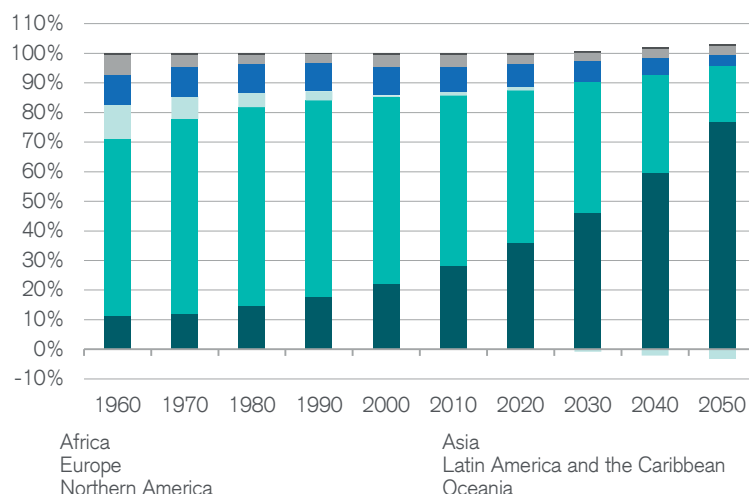
Toward an aging world

The world is in the midst of a major demographic transition. Not only is population growth slowing, but the age structure is changing as well, with the share of the elderly population rising and the younger population shrinking. Scientific advances allowing for a better understanding of infectious diseases, improving standards of nutrition and rising awareness of the benefits of a healthy lifestyle have sparked the longevity revolution.

As a result, average life expectancy has increased globally by roughly 25 years since 1950, from 47 to 72 years today. Improved distribution of modern medicine to developing countries and additional progress in the fields of nanotechnology (e.g. for the treatment of cancer) and biotechnology (e.g. for a better understanding of cancer and Alzheimer's disease) are likely to be the source of further increases in life expectancy in the future. By 2050, these advances will lead

Figure 1: Increasing contribution of African countries to population growth

Contribution from decade to decade*, 1960–2050



* 1960 shows the contribution to population growth since 1950, 1970 the contribution to growth since 1960, etc.
Source: United Nations, Credit Suisse

1. Nigeria, the Democratic Republic of the Congo, Ethiopia, the United Republic of Tanzania and Egypt. The other countries are India, which should see the highest expected population increase, Pakistan, Indonesia and the USA.

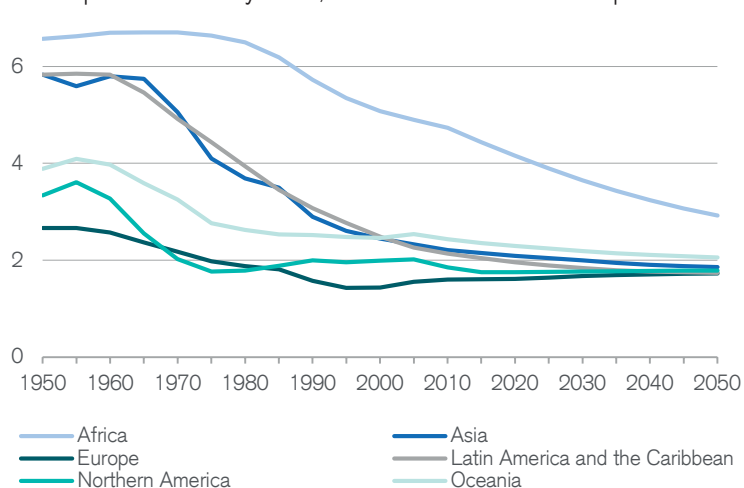
to an estimated worldwide life expectancy of approximately 77 years – with women (79 years) on average continuing to live longer than men (75 years).

The increase in life expectancy has been accompanied by falling fertility rates (**Figure 2**). Changes in social structures, easy access to birth control as well as shifting attitudes of women regarding partnership, education and work have led to a gradual decline in birth rates. Particularly in the developed countries, women have greater possibilities to pursue higher education and careers, which translates into increased opportunity costs of having a child. By contrast, people in developing countries still need to rely on their children for old-age care since they cannot assume that the government or existing pension schemes will support them financially. The fertility level in these countries is still much higher than in the developed world, but the downward trend in birth rates has taken hold here as well.

As a result of declining fertility rates and increasing life expectancy, the proportion of retirees in the population has risen. Over the past 70 years, countries in regions across the globe have seen an increasing share of people aged 65 and older (65+), particularly in countries belonging to developed regions. Here, the share of 65+ has increased from 7.7% in 1950 to over 19% today (**Figure 3**). This ratio will continue to increase in the coming years and is estimated to reach roughly 27% by 2050.

In contrast, the ratio stood at 3.8% in developing regions in 1950 and is projected to increase to 7.4% in 2020. This means that, in 2020, the share of people aged 65+ will lie just below where the share of people aged 65+ stood in developed regions in 1950. However, the comparison of the aging paths in **Figure 3** shows that, over the next 70 years, developing regions will experience an even stronger increase in the share of people aged 65+ than that experienced in developed regions between 1950 and 2020. As a consequence of the faster aging process in developing regions, the share of people aged 65+ living in the developed world has continuously decreased in the past decades. In 1980, just under 50% of people aged 65+ lived in developed regions. In 2020, this number is projected to decrease to roughly one third and, by 2050, to just over 20% (**Figure 4**). What has so far primarily been an issue in developed countries is thus increasingly becoming a global phenomenon.

Figure 2: Strong decrease in fertility rates around the world
Development of fertility rates, 1950–2050* in live births per woman



* Fertility rates are shown for five-year periods. For example, the fertility rate shown for 1950 corresponds to the period 1950–1955.

Figure 3: Developing regions aging at a faster pace
Share of people aged 65+, developing regions** (2020–2090) versus developed regions** in the past (1950–2020)

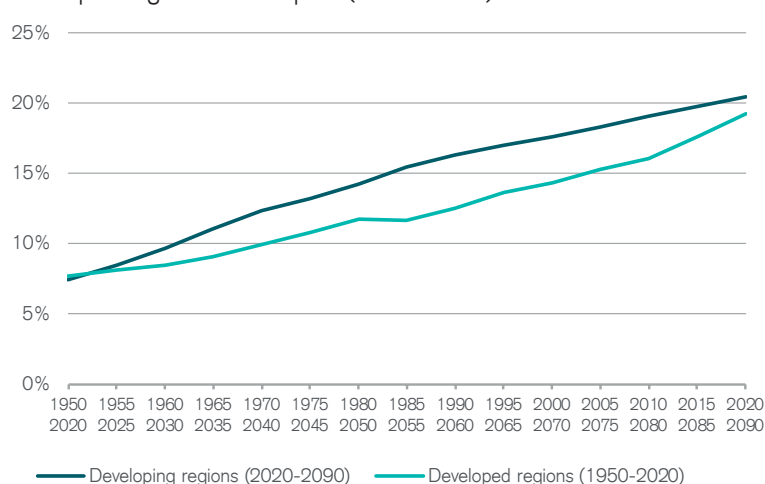
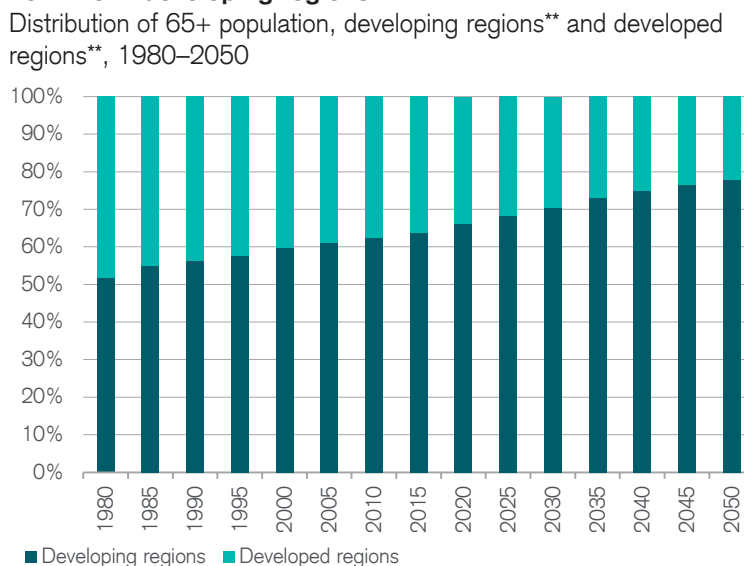


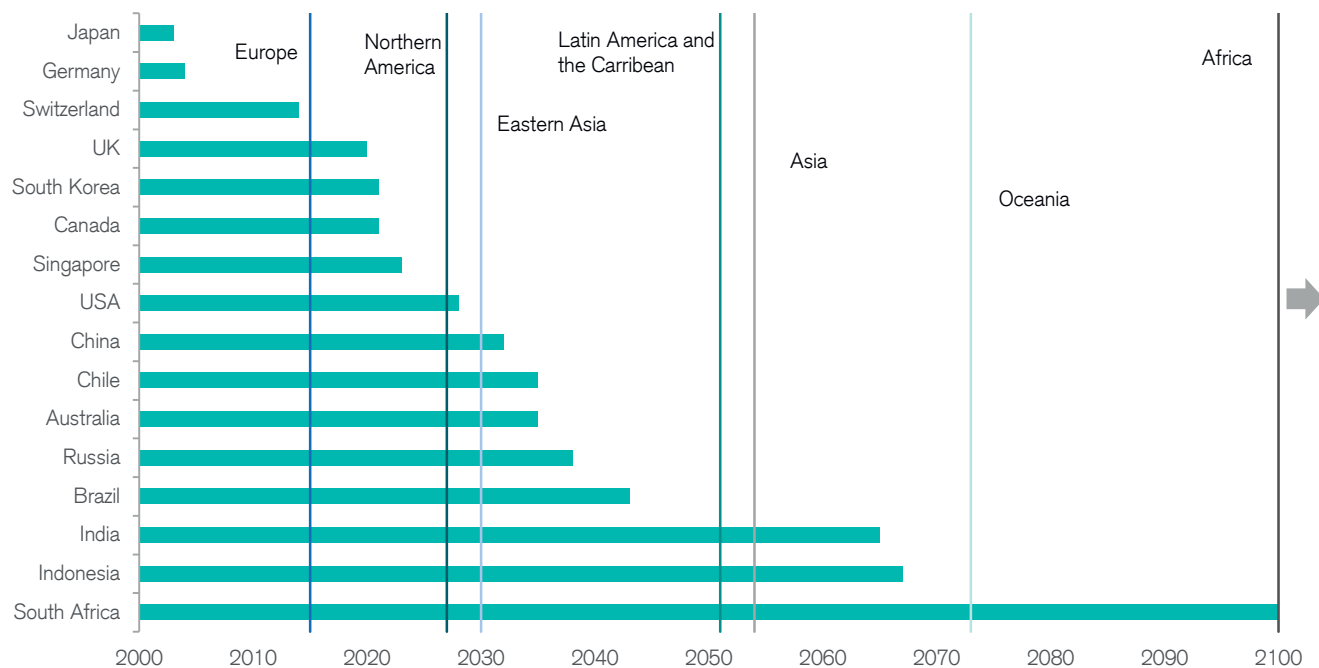
Figure 4: More than half of the global 65+ population now live in developing regions
Distribution of 65+ population, developing regions** and developed regions**, 1980–2050



** According to the definition of the United Nations
Source Figures 2–4: United Nations, Credit Suisse

Figure 5: Eastern Asia is aging rapidly

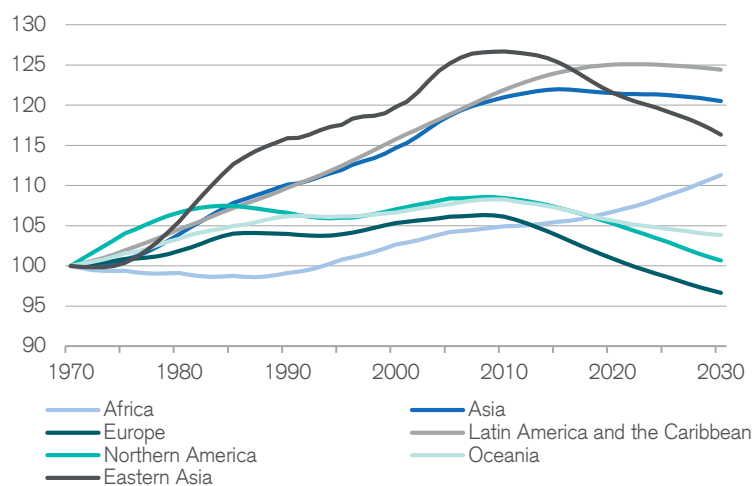
Year in which the population of people aged 65+ will overtake the population of 10–25-year-olds*



* Arrow: As of 2100, people aged 65+ will not have overtaken the population of 10–25-year-olds in Africa

Figure 6: Share of working-age population

Share of working age population (15–64-year-olds), index 1970 = 100



Source Figures 5 and 6: United Nations, Credit Suisse

After Europe and Northern America, Eastern Asia is one of the world's fastest-aging regions. Population projections suggest that, by 2030, the total number of people aged 65+ will surpass the number of people between ten and 25 years of age (Figure 5). Japan's old-age population (65+) already outweighs the younger generation (10–25 years). South Korea and Singapore will follow between 2021 and 2023, China by 2032. China, in particular, is suffering from the effects of its one-child policy. Although the government officially ended this policy in 2015, changing living conditions in cities and the sharp rise in prices for housing and education make it difficult for many couples to have more than one child.

Declining working-age population and the retirement wave of “boomers”

In addition to the increase in the older-age population, demographic aging is also apparent in a stagnating or even declining working-age population. In Europe, the working-age population, currently defined as the number of 15–64-year-olds, peaked in 2010 and has been rapidly shrinking since then (Figure 6). This is also true for Eastern Asia and, at a slightly lower pace, Northern America and Oceania. The only continent where the working-age population should continue to grow over the coming decades is Africa.

One aspect that already influences the development of the working population in certain countries is the retirement wave of the baby boomer generation. According to the most common definition, the baby boomers comprise the generations born between the end of the World War II and the middle of the 1960s. This striking period of particularly high birth rates left its mark on the age pyramid of several developed countries, mostly the ones involved in the world conflict. In Germany, due to the consequences of the war, this phenomenon only began in the mid-1950s, lasting until the end of the 1960s. In Japan, birth rates rose in two waves, first between 1947 and 1949 and later in the first half of the 1970s. In South Korea, the baby boom set in after the Korean War and lasted until 1963.

But, along with this occurrence, demographic aging is now entering a decisive phase everywhere in developed countries. The combination of significant age cohorts with rising life expectancy on the one hand, and successor cohorts of much smaller size (due to lower birth rates) on the other, is giving rise to clearly discernible imbalances of an ever-increasing nature. Particularly affected by this development is the pension system, where an increasing number of pensioners contrasts with a continuously declining number of financial contributors. To compound matters, benefits have to be paid out for a longer period of time. But the labor market will also have to face the repercussions of this wave of retirement. Without progress in productivity, this development will also have a negative impact on economic growth.

The baby boomers of the post-war era are now retiring. Their transition from the world of work to retirement began back in 2010 and will reach its peak, on average, around 2030. Over these two decades, roughly 370 million people in the developed world will have reached normal retirement age. Depending on the definition of the baby-boom cohorts, the retirement wave unfolds slightly differently from country to country, as illustrated in **Figure 7**.

Figure 7: Retirement wave

People reaching normal retirement age per 1,000 population; black line: value of 50 per 1,000 population



Source: United Nations, Credit Suisse





2. The long way to sustainable retirement provisions

Pension systems are under pressure to provide retirees with financial security in old age, while addressing the challenges of increasing life expectancy and demographic change. In order to secure adequate income for retirees while keeping public expenditure under control, a mixture of measures is necessary.

Retirement systems: Coping with an aging society

Most countries face aging populations, a low interest rate environment and resulting challenges to ensure financial security in retirement. Clearly, every country has its own economic, social, cultural and political context. **Table 1** provides a rough insight into the considerable differences between selected countries with regard to age structure, life expectancy, and key indicators of retirement provision. The comparison of the age structure and life expectancy today and in the future shows that the percentage of elderly people will increase considerably in many countries, along with a further rise in life expectancy. And, although many countries plan to raise the normal retirement age in the future, people will, on average, spend an increasing part of their lives in retirement – i.e. a large part of the life expectancy gains will likely be spent in retirement rather than working (**Figure 1**).

Table 1 further provides data on the replacement rates from mandatory pensions for three different income segments. This basic measure of retirement-income adequacy equals the ratio of the pension entitlement to lifetime gross average earnings. For full-career workers and, assuming that individual earnings grow in line with average earnings, the replacement rate reflects pension income in relation to the last earnings. In 2018, a South African with earnings

equal to the national average, for instance, will receive a pension that would make up about 19% of the last earnings. In India, on the other hand, the replacement rate is 95%. However, the coverage rate, i.e. persons above retirement age receiving a pension, indicates that receiving a pension is much more likely for South Africans than for Indians. Notable differences also exist when it comes to public spending on old-age pensions and survivors' benefits: India and Indonesia spend a mere 1% of gross domestic product (GDP), while Germany, Japan and Switzerland spend 10%. In 2050, Brazil would have faced spending of an estimated 17% of GDP. In light of the recently adopted reforms, such as raising the normal retirement age to 65, this figure will likely be lower in the future.

There is also considerable diversity between the systems that provide retirement income around the world. This makes a comparison of systems of old-age financing and their performance a difficult task. The Organisation for Economic Co-operation and Development (OECD) has undertaken an extensive cross-country analysis on the features and performance of pension systems. **Figure 2** provides an overview of national pension systems based on the OECD taxonomy consisting of two mandatory tiers. In addition, many countries have a third tier of voluntary personal or employer-provided private schemes.

Table 1: Retirement systems and demographic indicators – an overview

Various characteristics of demography and retirement in selected countries

	Age structure & life expectancy				Retirement age and duration			
	Population over age 65 (% of working-age population)		Life expectancy (at age 65), men		Normal retirement age, men		Normal years in retirement, men	
	2020	2060	2015–20	2060–65	2018	2062	2018	2060–65
Australia	28%	46%	20.0	23.8	65.0	67.0	20.0	21.8
Brazil	16%	50%	16.7	21.1	57.0	65.0	24.7	21.1
Canada	30%	49%	19.3	23.4	65.0	65.0	19.3	23.4
Chile	20%	55%	18.2	23.0	65.0	65.0	18.2	23.0
China	19%	58%	14.7	20.2	60.0	60.0	19.7	25.2
Germany	37%	60%	18.3	22.8	65.5	67.0	17.8	20.8
India	11%	29%	14.1	16.4	58.0	58.0	21.1	23.4
Indonesia	11%	31%	13.5	17.2	56.0	65.0	22.5	17.2
Japan	52%	83%	19.9	23.8	65.0	65.0	19.9	23.8
Korea	24%	90%	18.5	23.0	61.0	65.0	22.5	23.0
Russia	25%	47%	13.3	17.4	60.0	64.0	18.3	18.4
Singapore	16%		19.5	24.3	64.0	65.0	20.5	24.3
South Africa	10%	22%	11.5	12.9	60.0	60.0	16.5	17.9
Switzerland	31%	58%	19.9	23.9	65.0	65.0	19.9	23.9
UK	32%	52%	18.7	23.1	65.0	68.0	18.7	20.1
USA	28%	45%	18.4	23.1	66.0	67.0	17.4	21.1
OECD	31%	58%	18.1	22.5	64.2	66.1	18.9	21.4

Source: OECD, ILO, Mercer, Allianz, Credit Suisse

Table 1: Retirement systems and demographic indicators – an overview (continued)

Various characteristics of demography and retirement in selected countries

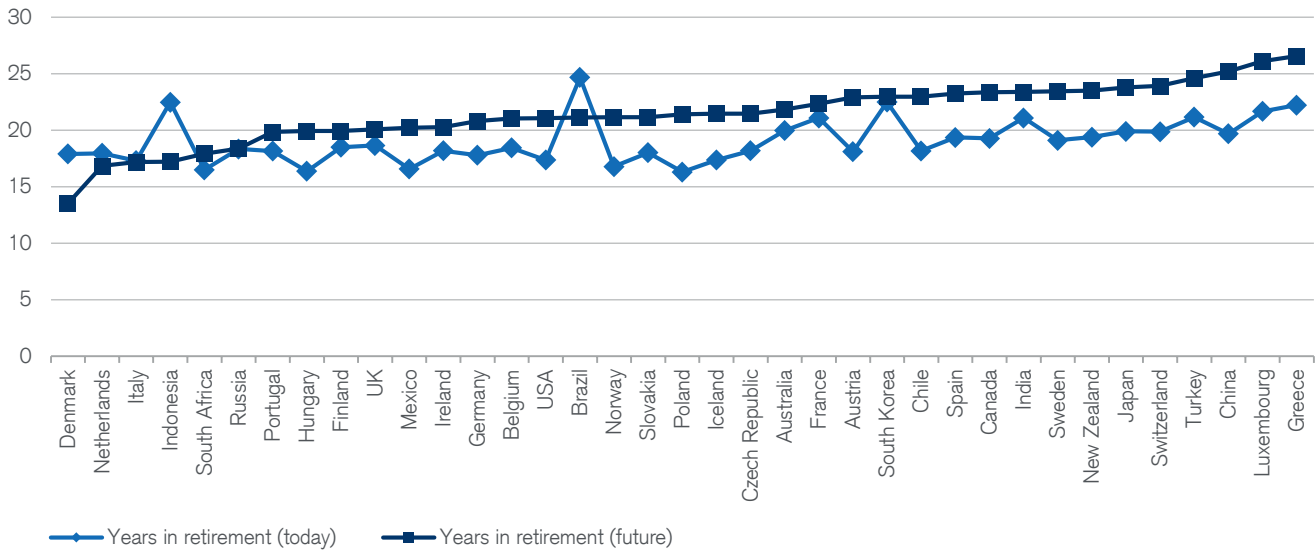
	Replacement rates				Coverage	Financing		Rankings	
	Average worker earnings (in USD, basis for calculation of replacement rate)	Individual with 50% of average earnings	Individual with average earnings	Individual with 150% of average earnings	Persons above retirement age receiving a pension (% of all males and females)	Public pension spending (% of GDP)		Melbourne Mercer Global Pension Index (rank out of 37 countries)	Allianz Pension Sustainability Index (rank out of 54 countries)
	2018	2018	2018	2018	2016*	2015–16	2050	2019	2016
Australia	64,089	76%	41%	44%	71%	4%	4%	3	1
Brazil	7,370	100%	65%	65%	78%	9%	17%	23	50
Canada	41,327	58%	51%	40%	100%	6%	7%	9	15
Chile	15,078	45%	37%	38%	79%	5%	4%	10	10
China	12,464	99%	79%	74%	100%	4%	10%	30	53
Germany	59,664	56%	52%	51%	100%	10%	12%	13	25
India	1,549	95%	95%	95%	25%	1%	1%	32	48
Indonesia	2,234	58%	59%	59%	14%	1%	1%	27	39
Japan	46,990	46%	37%	33%	100%	10%	10%	31	46
Korea	43,766	61%	43%	33%	100%	3%	6%	29	33
Russia	7,500	72%	57%	52%	91%	9%	12%		27
Singapore								7	24
South Africa	9,061	35%	19%	13%	81%	2%	3%	26	43
Switzerland	92,964	54%	44%	32%	100%	10%	11%	12	13
UK	52,467	51%	28%	20%	100%	8%	8%	14	11
USA	54,951	61%	49%	43%	88%	5%	6%	16	9
OECD	41,479	68%	59%	55%		9%	9%		

* except Australia, Japan, South Korea, Switzerland, UK, USA (2014)

Source: OECD, ILO, Mercer, Allianz, Credit Suisse

Figure 1: In many countries, life-expectancy gains will be spent in retirement

Years spent in retirement, calculated as the difference based on life expectancy at age 65 and the normal retirement age (for a man with a full career from age 22), 2018 and in the future (2060–2065)



Source: OECD, Credit Suisse

First-tier programs

Programs in the first tier offer a first layer of social protection in old age and usually aim to guarantee a defined minimum standard of living after retirement. Some countries provide benefits based upon residency alone or based on the number of years of residency. In so-called basic programs, the benefit level may be independent of the earnings level during working life. In targeted programs, benefits are determined based upon income from other sources or even the value of assets. Yet, in the majority of countries, first-tier benefits are only available to those who contributed during their working life. In basic programs, benefits are again independent of the earnings level. More common are minimum pensions, however, which calculate year-by-year entitlements based on earnings, or which define a lower bound for total lifetime entitlements for those who contribute for a certain number of years.

Second-tier programs

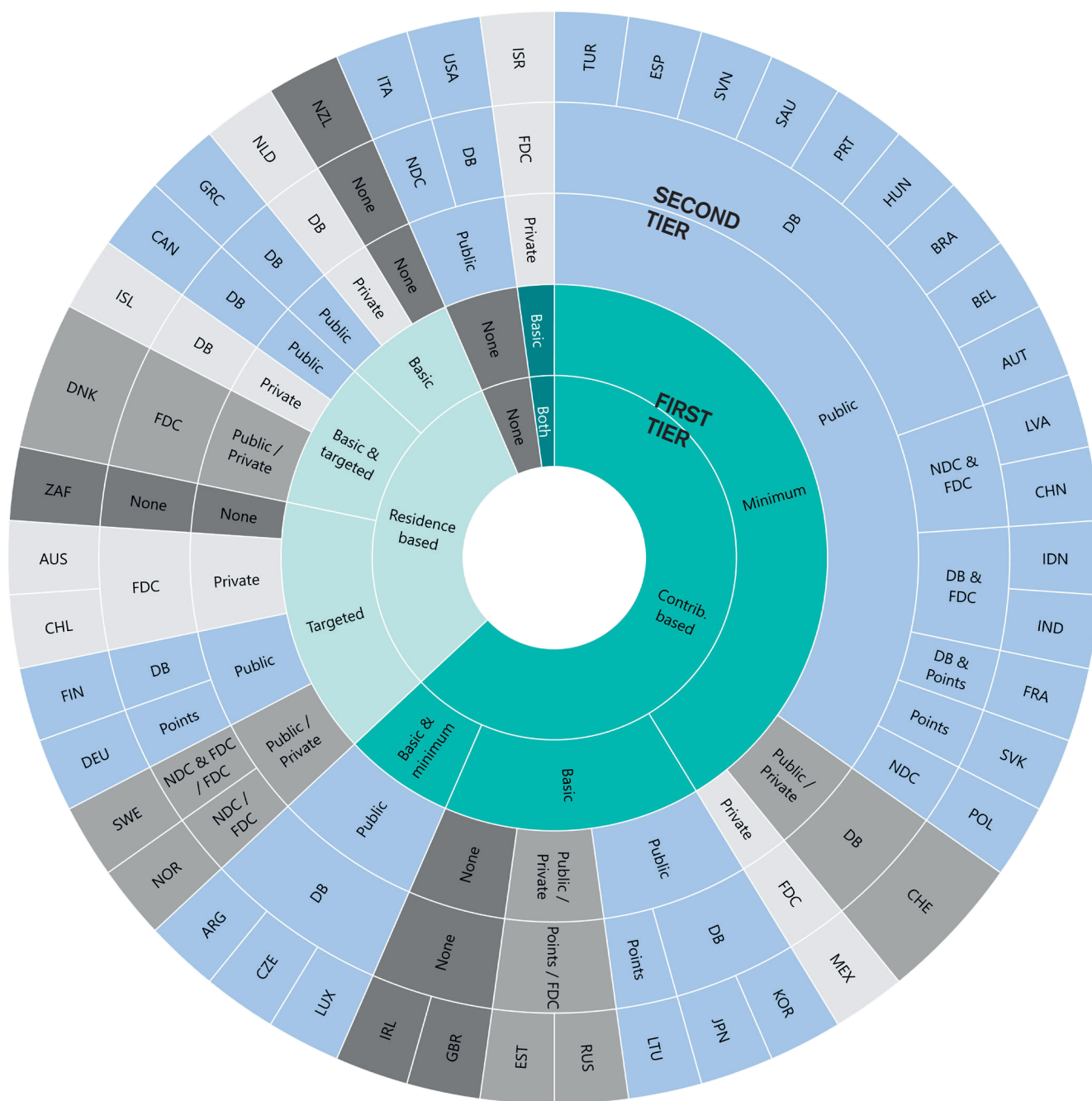
The second tier encompasses mandatory earnings-related components that aim to further improve the standard of living in retirement. All OECD countries except Ireland, New Zealand, and in the future the United Kingdom have such public or private pension schemes. The OECD differentiates between four types of schemes. First, in defined benefit (DB) schemes, benefits depend on the number of years of contributions. Accrual rates and individual pensionable earnings are the most common, with 17 OECD

countries continuing to run public pay-as-you-go schemes. Another ten countries have replaced them due to financial sustainability issues. Mandatory or quasi-mandatory private defined benefit schemes are in place in Iceland, the Netherlands and Switzerland. Second, in points schemes, workers receive earnings-related pension points that are converted into regular pension payments at retirement. Third, in funded defined contribution (FDC) plans, contributions and investment returns flow into an individual account. Fourth, in notional defined contribution (NDC) schemes, a notional rate of return is applied to contributions. The rate is notional because, in reality, existing funds finance the pensions of current retirees. At retirement, the notional capital calculated in the books of the managing institution is converted into a monthly pension taking into account life expectancy and expected future returns.

Despite the complexity of comparing pension systems, there have been considerable efforts to benchmark their performance. The Melbourne Mercer Global Pension Index (Mercer, 2019), for instance, assesses retirement income systems in a wide range of countries based on more than 40 indicators. The overall index is based upon three sub-indices. The first, “adequacy,” measures the benefits currently being provided along with some important features of the pension system. The second, “sustainability,” evaluates the likelihood that the current system will be able to provide benefits in the future. The

Figure 2: Taxonomy of selected national pension systems

Overview of latest legislation (applying to future retirees entering the labor market in 2018 at age 22)*



* DB = Defined benefit, FDC = Funded defined contribution, NDC = Notional defined contribution; ARG: Argentina, AUS: Australia, AUT: Austria, BEL: Belgium, BRA: Brazil, CAN: Canada, CHE: Switzerland, CHL: Chile, CHN: China, CZE: Czech Republic, DEU: Germany, DNK: Denmark, ESP: Spain, EST: Estonia, FIN: Finland, FRA: France, GBR: United Kingdom, GRC: Greece, HUN: Hungary, IDN: Indonesia, IND: India, IRL: Ireland, ISL: Iceland, ISR: Israel, ITA: Italy, JPN: Japan, KOR: South Korea, LTU: Lithuania, LUX: Luxemburg, LVA: Latvia, MEX: Mexico, NLD: Netherlands, NOR: Norway, NZL: New Zealand, POL: Poland, PRT: Portugal, RUS: Russia, SAU: Saudi Arabia, SVK: Slovakia, SVN: Slovenia, SWE: Sweden, TUR: Turkey, USA: United States, ZAF: South Africa.

Source: OECD, Credit Suisse

third sub-index, “integrity,” encompasses items that influence the overall governance and operation of the system and thereby affects the level of confidence that citizens have in their country’s system.

In 2019, the Netherlands and Denmark headed the rankings with scores above 80, which represent a grade A rating (Figure 3). These systems reach high scores on all three sub-indices. What stands out are the rather low sustainability scores of many countries, i.e. the long-term sustainability of current retirement income systems is frequently called into question. For instance, countries such as Ireland, Germany, France, Brazil, Spain, Austria and Italy also exhibit a considerable gap between the adequacy of current retirement income and the sustainability of the system for the coming generations of retirees.

Pension reforms – a necessity, but facing increasing opposition

Given the long-known financial sustainability issues, many countries have taken steps to improve their pension systems¹. Among the broad reform trends in the past decades is a move from defined benefits to defined contribution systems. In the past, pension systems were often pay-as-you-go defined benefit schemes, where pension benefits depended on the number of years of contributions, rates at which pension entitlements accrue (accrual rates) and a measure of individual earnings (reference wage).

Over the last few decades, these defined benefit schemes have been increasingly replaced or complemented by funded defined contribution plans or notional defined contribution schemes. This follows the trend toward further individualizing pension benefits, increasing links between individual lifetime contributions and benefits, and setting incentives to work longer. Some countries have also tightened the link between earnings and benefits within their pay-as-you-go defined benefit schemes, for instance with a points system where benefits are proportional to lifetime contributions. Most OECD countries now also take lifetime earnings into account when calculating pensions benefits rather than merely the last few – and often best – years of earnings.

Furthermore, a clear trend is the implementation of automatic adjustment mechanisms where pension system parameters are automatically adjusted to changing indicators such as

life expectancy, demographic ratios or funding balances. Today, half of the OECD countries have at least some automatic adjustment mechanisms. Funded defined contributions have a built-in automatic adjustment of pension benefits to life expectancy, as monthly benefits are usually annuitized based on life expectancy. Similarly, although notional defined contribution schemes are pay-as-you-go, pension entitlements are calculated similar to funded defined contribution plans and take into account life expectancy.

Some countries with defined benefit systems have also introduced sustainability factors in their defined benefit schemes. In Finland, pension benefits are linked to life expectancy; in Japan, they are also linked to the number of contributors. Spain planned to introduce such a mechanism in 2019, but has suspended this until 2023. While such automatic adjustments improve the sustainability of systems, pension adequacy could nevertheless suffer as the level of benefits could fall considerably if retirement ages or contributions do not adjust at the same time.

Concerning retirement ages, some countries have a set schedule to increase normal retirement age. In Denmark, Estonia, Italy (suspended until 2026) and the Netherlands, the link is one-to-one, i.e. a one-year increase in life expectancy leads to a one-year increase in the retirement age, implying that all life expectancy gains will be spent working. Finland and Portugal increase the retirement age by two-thirds of life expectancy gains.

The OECD has estimated that pension replacement rates have been roughly stable over the past few decades, falling by only one percentage point on average. However, the coming generations may face considerable changes. While future retirees’ replacement rates will remain stable in 10% and even rise in 30% of OECD countries, they are expected to fall in the remaining 60% of OECD countries. The largest drops of more than 30 percentage points (in comparison with the cohort retiring today) should take place in countries that started from relatively high pension levels, such as Mexico, Poland and Sweden. In Chile, Greece, Spain and Switzerland, baseline replacement rates are projected to fall by more than 15 percentage points.

Despite the urgency for further pension reforms, reform momentum has diminished among OECD countries in the last few years. While countries took measures after the global and European financial crises to improve the financial sustainability of their pension systems, there is now an increasing risk that some of

1. For details on recent pension reform trends, see OECD (2019b), Chapter 1.

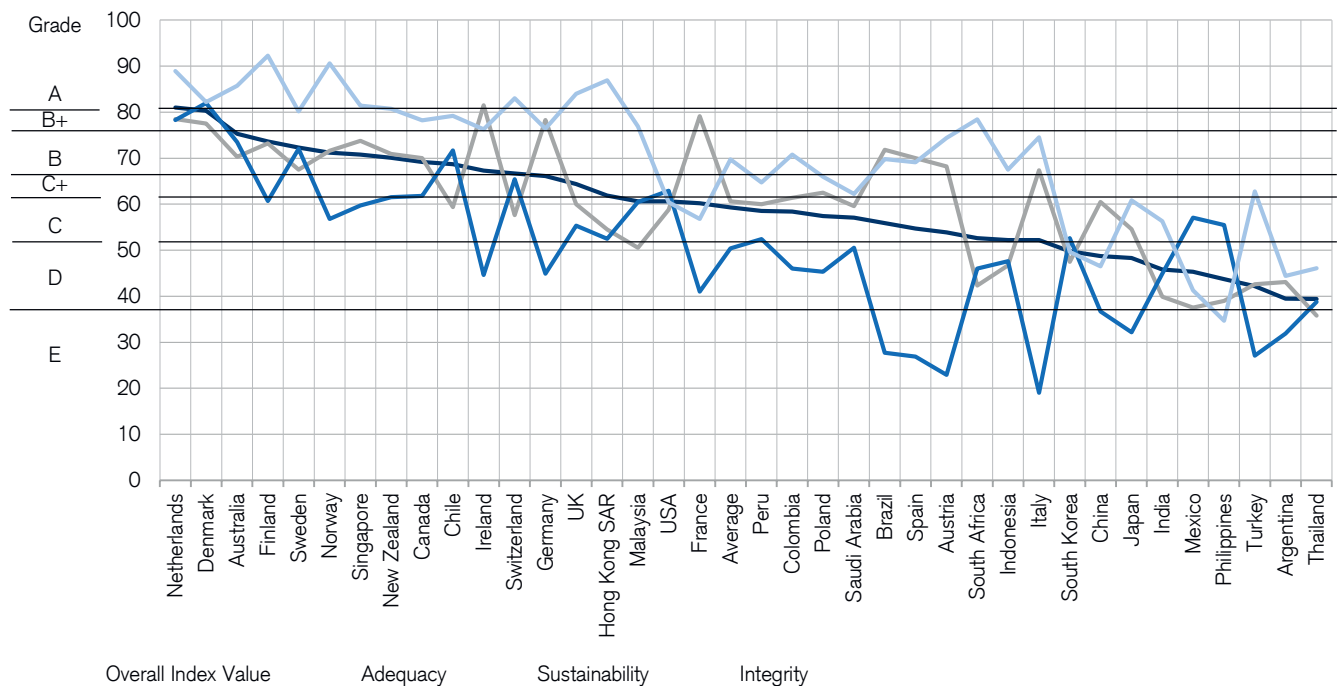
them may backtrack on adopted reforms. In view of the recent economic upswing, political support for measures to improve short-term financial balances seem to have weakened in some countries. Nevertheless, the necessity to adapt pension systems to demographic change remains. Furthermore, from a welfare point of view, reforms would be better undertaken in a recovery phase than in a recession.

In general, the following four options can make pension systems more sustainable. First, people could be encouraged or forced to save more for retirement during their working life. Second, additional funds could be mobilized by increasing taxes. However, given already high taxation in many OECD countries, this approach is unlikely to provide a solution, especially if negative work incentives from higher taxation or tax avoidance are considered. Third, raising the retirement age would be an obvious approach to reducing funding gaps, and could be complemented by incentives to encourage people to work longer. Fourth, people might accept lower pensions in the future in order to guarantee long-term sustainability of the system. Typically, a combination of measures will be required to ensure that future pensioners continue to enjoy the standard of living they are accustomed to.

For instance, relying purely on higher contributions would lead to lower net wages, potentially adding to higher wage costs and thereby reducing employment. Moreover, as average life expectancy is expected to continue rising, the contributions in favor of pension provision would have to increase constantly if the retirement age were to remain unchanged. For this reason, despite strong opposition, the most expedient approach to increase the sustainability of pension provision should be implemented – a gradual increase in retirement age.

This would simultaneously extend the savings phase and shorten the average pension-payment period. In principle, people may be willing to raise the retirement age, not only because of sheer necessity, but also because “old” age today is not what it used to be. That said, with older generations exerting strong political influence in aging societies, organizing opposition to pension reforms has in fact become easier.

Figure 3: Gaps between adequacy of benefits provided today and their sustainability are common
Melbourne Mercer Global Pension Index 2019



Source: Mercer, Credit Suisse



Figure 4: Selected pension systems in Europe

1 UK

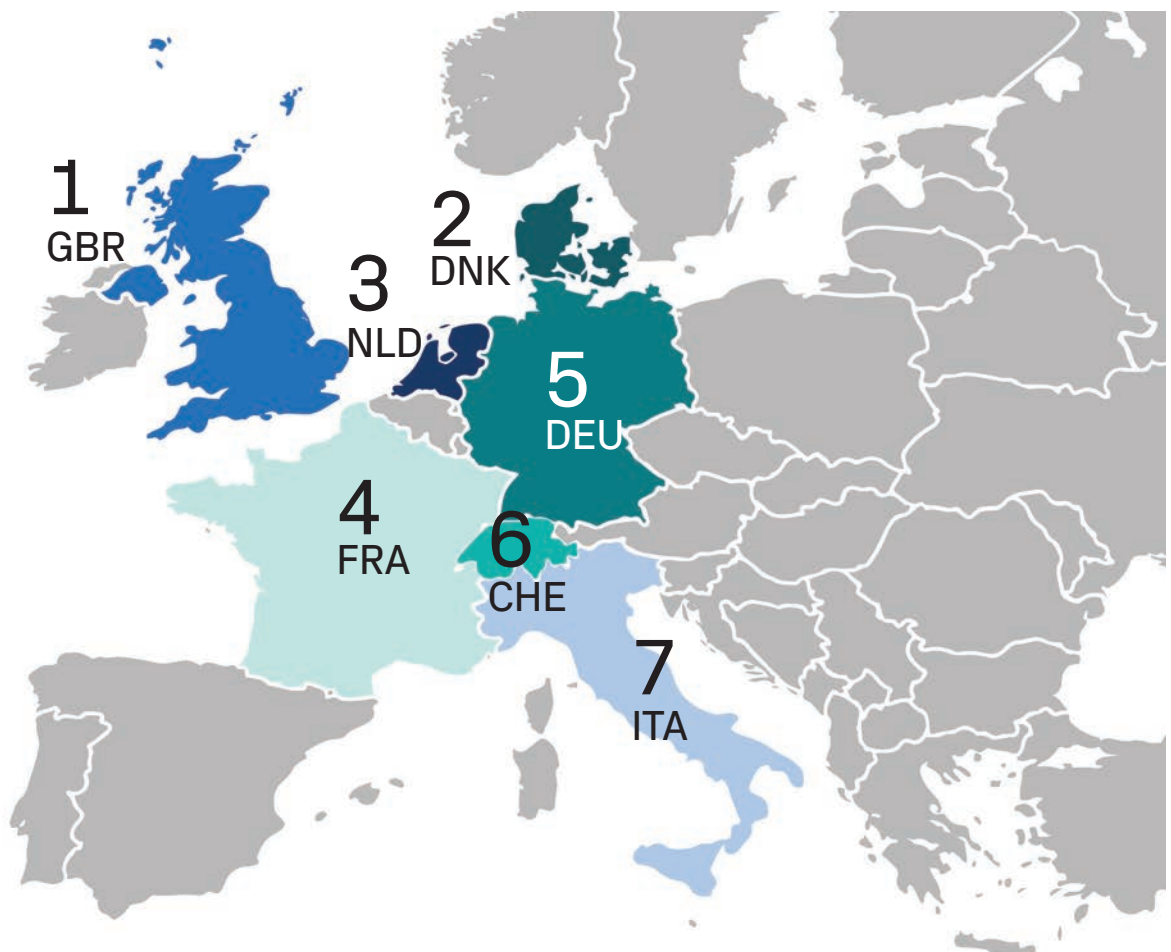
- Single-tier state pension system
- Income-tested pension credit
- Voluntary occupational and personal pension systems, where employers are required to enroll employees; then employees can choose to opt out

2 Denmark

- Universal means-tested basic pension system financed by tax revenues
- Mandatory occupational pension schemes, where pension is paid out as lump sum or in the form of annuity
- Fully funded defined contribution system

3 Netherlands

- Flat-rate public pension financed via payroll taxes
- Quasi-mandatory earnings-related occupational pension system based on collective agreements between employer and employees
- Voluntary individual saving schemes



4 France

- Mandatory earnings-related public pension with a minimum contributory pension
- Mandatory occupational pension schemes based on a points system
- Voluntary occupational pension plans

5 Germany

- Means-tested safety net for low-income pensioners
- Earnings-related pay-as-you-go system based on the number of pension points earned during an individual career
- Voluntary private pension plans

6 Switzerland

- Earnings-related public pension with a minimum pension
- Mandatory occupational pension insurance system where employee and employer contribution rates increase with age
- Most employees receive further over-obligatory benefits
- Voluntary private pension plans

7 Italy

- Minimum means-tested social insurance benefits
- Notional defined contribution scheme for workers
- Voluntary occupational pension schemes

* CHE: Switzerland, DEU: Germany, DNK: Denmark, FRA: France, GBR: United Kingdom, ITA: Italy, NLD: Netherlands

Source: Mercer, OECD, Pension Funds Online, World Bank

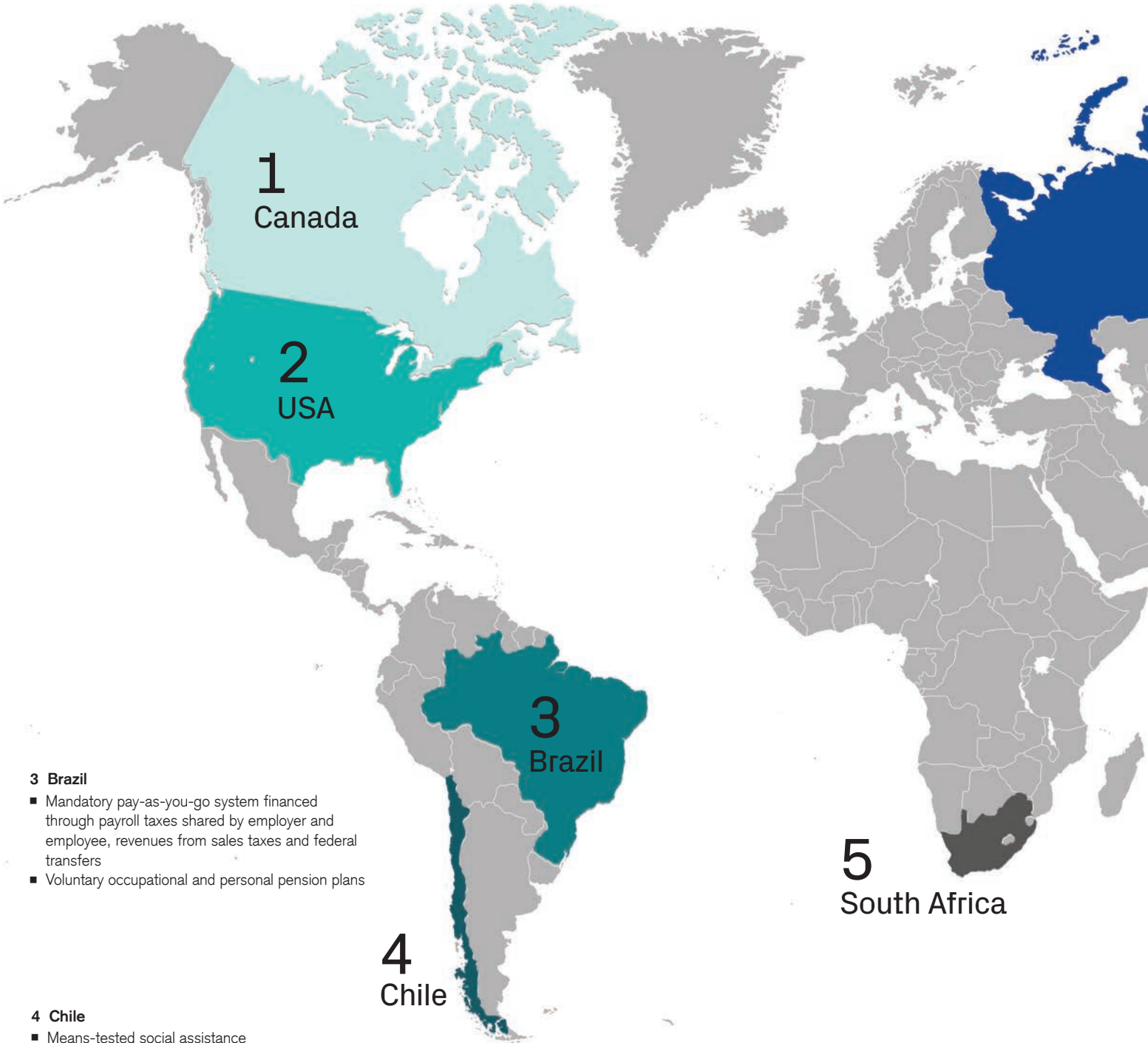
Figure 5: Selected pension systems in the Americas, South Africa, Russia and Asia Pacific

1 Canada

- Means-tested universal flat-rate pension financed by tax revenues
- Earnings-related pension based on revalued lifetime earnings
- Voluntary occupational pension schemes and individual retirement savings plans

2 USA

- Means-tested top-up benefit
- Public social security system providing pension benefits (progressive benefit formula based on lifetime earnings, adjusted to a current dollar basis)



3 Brazil

- Mandatory pay-as-you-go system financed through payroll taxes shared by employer and employee, revenues from sales taxes and federal transfers
- Voluntary occupational and personal pension plans

4 Chile

- Means-tested social assistance
- Privately managed system in the form of a defined contribution based on employee contributions with individual accounts
- Employer-sponsored plans

5 South Africa

- Means-tested public pension
- Voluntary occupational schemes encouraged by tax deductions

Source: Mercer, OECD, Pension Funds Online, World Bank



6 Russia

- Old-age insurance pension under statutory compulsory pension insurance scheme
- Statutory social pensions
- Voluntary privately funded pension plans managed by non-state pension funds

7 China

- Basic pension based on indexed individual wage and province-wide individual earnings
- Mandatory employee contributions that are either funded individual account systems or notional account systems

8 Japan

- Flat-rate basic pension
- Earnings-related pension
- Voluntary supplementary pension plans

9 South Korea

- Public earnings-related pension scheme with a progressive formula
- Tax-favored private pension plans

10 India

- Earnings-related employee pension scheme
- Mandatory defined contribution employee provident fund
- Complementary employer-managed pension schemes (mostly defined contribution)

11 Singapore

- Mandatorily defined contribution system based on individual accounts
- Non-contributory pension scheme for government employees and provident fund scheme for certain armed forces personnel

12 Indonesia

- Earnings-related social insurance scheme
- Mandatory defined contribution plans for workers in the private sector
- Voluntary defined contribution plans for other workers
- Defined benefit scheme funded through employer and employee contribution

13 Australia

- Means-tested age pension funded through general taxation revenue
- Mandatory employer contributions to employee's private pension plans; mainly defined contribution plans
- Voluntary contributions from employers, employees or the self-employed, which are encouraged through taxation concessions

Retirement income plans for the 21st century

Keith Ambachtsheer

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Beyond defined benefits and defined contributions

The triple threat of rising longevity, falling birth rates and historically low interest rates is forcing policymakers around the world to have a close look at their countries' retirement income systems. Are they "fit for purpose"? If not, why not? What can be done to improve them? This article addresses these questions.

Micro perspectives

The evolution of retirement income system (RIS) design at the micro level is best understood through the work of four Nobel Laureates. Through Modern Portfolio Theory, Prof. Harry Markowitz led us to rethink how to construct investment portfolios. If we can estimate the prospective return characteristics (i.e. expectations, variances and co-variances) of individual securities, then we can construct "efficient" portfolios offering a "frontier" of the best risk/reward opportunities. If we can also specify our tolerance for risk-taking, then we can identify the "efficient" portfolio that best meets our needs.

Prof. Robert Merton argued that this "optimization" philosophy should be stretched through people's lifetimes. If people wanted to maintain their standard of living after they stopped working, how much would they need to save during their working lives? This depends on the investment return their savings earn, how long they work, how long they live after retiring, and how their tolerance for risk-bearing and their consumption patterns change as they age. Depending on how these four questions are answered, the required working-life savings rate can be anywhere between 5% and 40% of pay.

Prof. George Akerlof pointed out that micro-economic theory assumes that buyers and sellers in any market had "symmetric information" about the product or service they were buying and

selling. If sellers know more about what they are selling than the buyers know about what they are buying, then buyers will pay too much for too little value. The market for investment management services is the largest "asymmetric information" market in the world. Thus retirement savers will generally pay fees that are too high for the value they receive from investment managers, unless their savings are managed through fiduciary structures that level the informational playing field.

Prof. Daniel Kahneman and his collaborators showed that people also exhibit logic and behavioral shortcomings leading to inconsistent investment decisions based on the prospects of relative and absolute financial gains and losses. This has led RIS designers to construct nudges and decision defaults to help guide workers and retirees toward decisions that are "right" for them.

Macro perspectives

Switching now from a micro to a macro perspective on RIS design, 1994 saw a big breakthrough with the World Bank's report "Averting the Old-Age Crisis." Its key message was that there is no single best "micro" solution to RIS design. Instead, we should be thinking of the respective roles of government, employers and individuals (or families) in creating sustainable lifetime post-work income streams. This will require integrative 3-pillar-system thinking:

- Pillar 1: A universal base pension provided by the state funded on a pay-as-you-go basis.
- Pillar 2: A prefunded employment-based pension sponsored by the employer.
- Pillar 3: Individual retirement savings programs provided by the financial services industry.

With the passage of 25 years since the report was published, this is a good time to ask how the 3-pillar macro RIS model is doing:

- Pillar 1: The main issue here is sustainability, with demographics being destiny. Countries that have made adjustments as their populations continue to grow older (e.g. through raising the retirement age, changing contribution rates and/or benefits) continue to have sustainable Pillar 1 systems. Countries that have not made those adjustments face increasing difficulties.
- Pillar 2: Traditional DB plans are becoming an extinct species (i.e. too expensive and risky for most employers). New, more sustainable versions are replacing them (e.g. shared-risk, target benefit, collective DC). Participation is expanding through auto-enrolment regimes and innovative distribution strategies. There is also growing innovation in the design and management of pension delivery organizations.
- Pillar 3: The Akerlof and Kahneman predictions are playing out in practice, with many individuals implementing retirement finance and investment decisions poorly. These problems can only be solved by moving these people into Pillar 2 arrangements with strong fiduciary umbrellas, effective lifecycle designs and strong implementation infrastructures.

In short, much of the world needs material work-force coverage expansion into effective Pillar 2 retirement finance and investment arrangements.

Expanding Pillar 2 coverage and designing decumulation “back-ends”

The simplest way to achieve this expansion goal is for governments to require employers to offer a qualifying Pillar 2 plan to their employees. Unsurprisingly, countries that achieve top scores in the Melbourne-Mercer Global Pension Index based on adequacy, sustainability and integrity have had this requirement for decades (e.g.

Netherlands, Denmark, Finland, Australia). The UK, Canada and the USA have begun to use auto-enrolment to join this elite group. Designing effective decumulation “back-ends” for DC arrangements is becoming a priority, especially in Australia with the maturing of its almost 30-year-old “super system.” The elephant in the decumulation room is longevity risk, i.e. the risk of outliving one’s retirement savings. Conceptually, the solution is simple: the provision of longevity insurance through longevity risk pooling. Practically, however, the devil has been in the details of making this work in practice. Workable solutions are slowly emerging.

In conclusion

Academia has provided solid theoretical frameworks and research findings to guide the design of 21st century retirement income plans around the world. We have created lively international expert networks to facilitate the discovery and spread of best implementation practices. Now the hard work begins; namely dealing with the devils in the implementation details.



3. The multidimensionality of age

We define our age by what it says on our identification card, a number given to us based on how many years we have been on this planet. This is a unit of measurement which is unaffected by the era we live in, a number which does not reflect our subjective well-being.

Age is not what it used to be

Retirement is a relatively new idea. For a great part of human history, people worked until the day they died. The idea of retirement originally stems from Otto von Bismarck, who, in 1881, as minister president of Prussia, suggested financial support for the elderly, funded by the state. The introduction of the pension systems is the result of a prolonged political struggle by the workers' movement in Prussia. Bismarck introduced social insurance because he wanted to promote the well-being of workers and, more importantly, because he wanted to ward off demands for more radical socialist alternatives. The idea caused a big stir, since, until that moment, people simply did not know the concept of retirement. The first step in the transition from a two-stage system – education and working life – to a three-stage system including retirement was made (see Box on page 28 for further information about this transition). Once established, this pension system provided financial support for people who reached the age of 70. During a time where life expectancy at birth was approximately 43 years (1895)¹, achieving this retirement age was rare. Hence, even with retirement and pensions in place, most people in Prussia never benefited from them.

1. As a proxy, the life expectancy of Germany in 1895 was taken. The data stems from Our World in Data (2019).

Advances in modern medicine, among other things, have contributed to a rise in life expectancy worldwide. Nowadays, an increasing share of the population lives beyond the age of 70 to enjoy retirement, leading to an increasing number of retirees who benefit from pension systems. However, the founding fathers of modern retirement probably did not anticipate that such large numbers of retirees would one day draw financial support from pension systems. Moreover, in the decades following the launch of pension systems, governments lowered the retirement age from 70 to a level of somewhere in the mid-60s just as life expectancy was rising. At the same time, the reality of aging has changed in terms of health and abilities of the aged. Given these considerations, declaring a certain retirement age and the associated retirement scheme as a “natural law” and sticking to it for decades seems illogical.

Chronological age and biological age

Chronological age is determined by the calendar date a person was born and is measured in days, months and years. Since chronological age has been the conventional measure of aging for several centuries, it is comparable across different points in time. However, certain difficulties arise when using the chronological age as a measure of population aging. For instance, chronological age does not say anything about a person's well-being. Therefore, we need to

distinguish between chronological and biological age, which is a measure that links age more intrinsically to people's well-being.

In order to address the disconnect between chronological and biological age, consider a common problem in economics: the difference between nominal and real prices. Take, for instance, a watermelon that cost USD 0.60 in January 1950 and USD 5.98 in November 2019. If you want to compare both prices accurately across time, you must adjust for inflation during these 70 years. What you find is that watermelons did indeed increase in (nominal) price, but when comparing the inflation-adjusted (real) variables, the watermelon actually became cheaper. In particular, the inflation-adjusted price for watermelons in 1950 was equivalent to USD 6.57 in today's money.

Similarly, chronological age is not a good measure when comparing ages across time. Age today is not what it used to be: If you compare a 65-year-old man in 1950 with a 65-year-old man in 2020, it is likely that the latter has become biologically younger. The reason is that, owing to a healthier lifestyle, a 65-year-old today is likely to be in better physical and mental shape than a 65-year-old 70 years ago. For instance, adjusting for mortality rates shows that a 65-year-old in Switzerland today is comparable to a 51-year-old in 1950 (see Box on page 30 for an explanation of the mechanics behind the calculations). In other words, 65 is the new 51 (see **Figure 1**). The changes in mortality rates help adjust for the "age inflation."

The origin of retirement

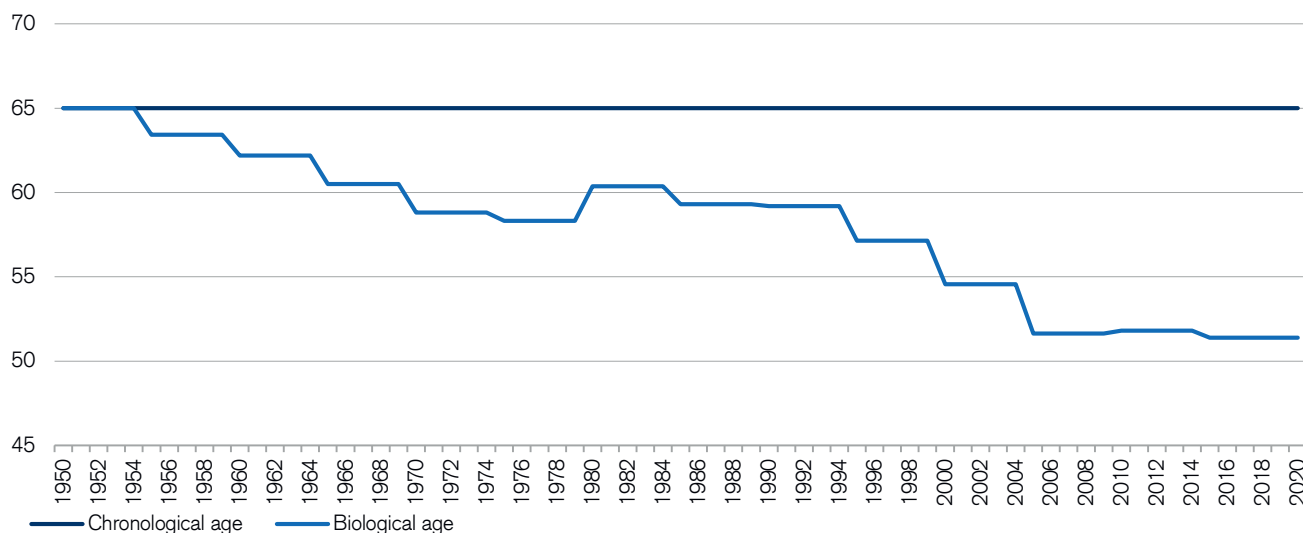
Lifelong work has been a reality for much of human history. For many generations, people did not know anything other than working until the day they died. Work-free periods rarely existed in most of human culture (one notable exception is the day of rest prescribed by religion). Instead, human life was characterized by the values of work and duty. On the one hand, work guaranteed a certain income, and, on the other hand, it gave people a social status because workers served the community. In the face of these benefits, work-free periods were simply not compatible with the understanding of work during that time. In fact, a person incapable of working was often regarded as useless.

Around the turn of the 20th century, the introduction of pension insurance became a necessity in industrializing countries because an increasing number of people were earning their income exclusively from paid work in factories and had no other means of income to rely on (e.g. income from farm work). This development was accompanied by medical concerns about the performance of old-age workers in industrial production: age was equated with decreasing efficiency, declining productivity and a lack of flexibility. Hence the loss of work due to old age was synonymous with financial bottlenecks, unless enough money had been saved. Moreover, the change in social norms and obligations played a decisive role. The introduction of retirement and the pension granted to older people was based on the principle that a worker who devotes his/her entire life to labor for the employer should be entitled to a reward when entering the last stage of life. This also meant a shift away from the reliance on relatives and local communities at old age, toward collective solidarity, which was increasingly taken care of by the state.

The division of life into three stages – education, working career and retirement – was established. Over time, retirement has evolved into an integral part of people's lives. The absence of retirement is hardly imaginable in developed countries today, but is still a reality in many developing countries.

Figure 1: 65 is the new 51 in Switzerland

Chronological age (65) compared to biological age in Switzerland; biological ages adjusted for mortality rates of 1950–1955



Source: United Nations, Credit Suisse

The shortcomings of mortality-adjusted measures

When debating longer working lives, the crucial question is whether people are actually feeling better in old age. In general, there are different reasons why life expectancy increases: medical advances, for instance, decrease infant-mortality rates, which in turn increase life expectancy. However, lower infant-mortality rates do not contribute to healthier old age. Better nutrition and healthier lifestyles, on the other hand, do improve health, and help to prolong average lifespans. This distinction is important when debating longer working lives because working longer requires workers to be in better mental and physical shape as they grow older. Hence, mortality-adjusted indicators only tell one part of the story.

Other factors come into play when determining biological age. An alternative measure includes the age corrected for the level of self-perceived health (Figure 2). When looking at the measure adjusted for self-perceived health for different age groups, the changes are somewhat heterogeneous. For instance, in Switzerland, a 35-year-old in 2008 was still a 35-year-old in 2018 and a 51-year-old in 2008 was comparable to a 50-year-old in 2018. The largest changes apply at older ages: 70 is the new 66.

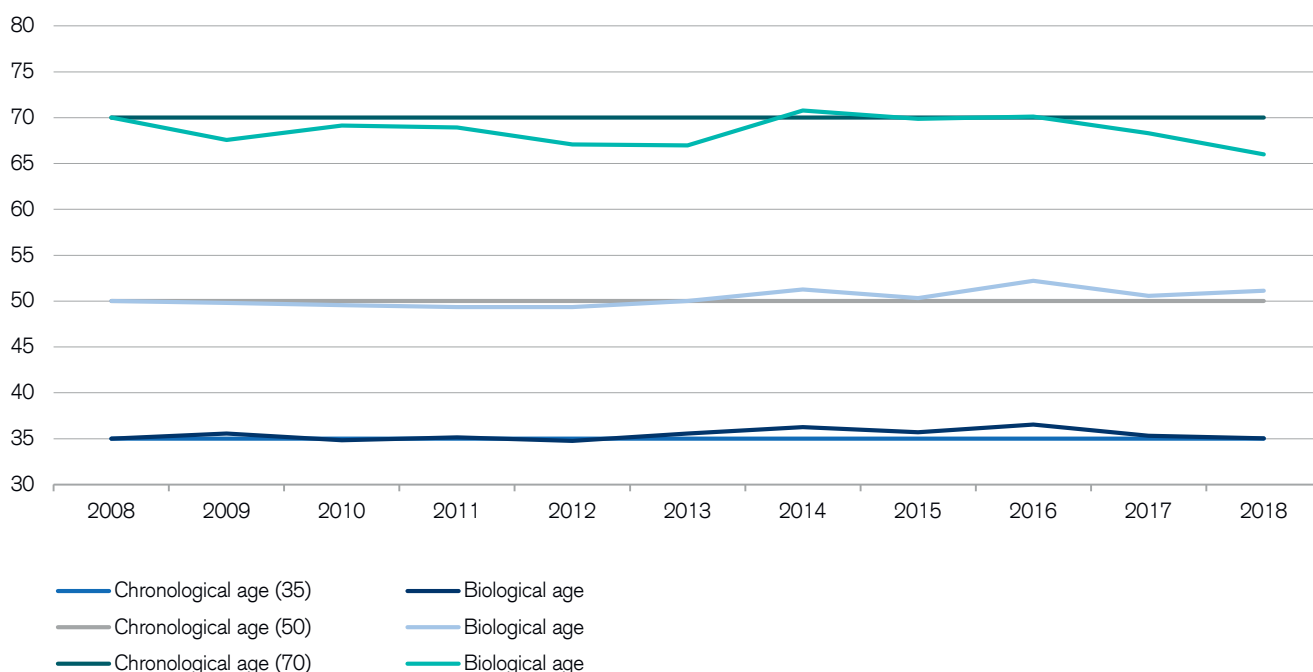
These results from Switzerland provide interesting insights about age. First, biological age developments differ across age groups. Second, it seems that the older the people get, the higher the impact of changes in healthier lifestyles on biological age. These results from Switzerland emphasize the multidimensionality of age; they are also in line with an overall tendency in the European Union, where, in particular, old-age people today feel biologically younger than their ancestors. However, differences between countries exist and some display an opposite trend. Applying a universal and rigid threshold for retirement would therefore not live up to this complexity.

Statistical measures do not necessarily represent the reality of every individual

Policymakers need to design policies that address the problem of both aging and longevity. While people are on average becoming older, deviations from the norm can vary substantially between individuals. For instance, linking normal retirement age to life expectancy – a policy often proposed as a reaction to an aging society – would only be fair for those people who age in line with the average life expectancy. On the one hand, people exceeding the average life expectancy would need to work even longer to

Figure 2: Biological age developments differ across age groups in Switzerland

Chronological age compared to biological age in Switzerland; biological ages adjusted for levels of self-perceived health* of 2008 and calculated for each age group



* Self-perceived health is measured as the share of respondents declaring "good" or "very good" health

Source: Eurostat, Credit Suisse

pay for pensions, while people who do not live as long as the average life expectancy would lose their pension rights if the same retirement age is imposed on everybody. This example illustrates that basing policies on a generalized statistical measure may fail to address the needs of individuals in a fair and accurate manner.

Where policymakers fail to address the multi-dimensionality of age, such policies can lead to inequality, creating winners and losers: while healthy people will enjoy the benefits of longer working lives, people who are less healthy may be seriously challenged by additional years in the labor force, while not working would lead to a reduction in old-age income. This is particularly worrying as people with higher incomes often have higher life expectancies and therefore tend to benefit from pensions for a longer period of time (OECD, 2019b). Those pensions, to some extent, are financed by those who die earlier and they are often the same people who have lower incomes during their working lives. In order to mitigate these inequalities, policymakers should provide support for old-age workers who are unable to work longer.

The key is more flexibility when designing policies. In order to make longevity a success, policymakers need to help healthier old-age workers find employment, while, on the other hand, allowing less-healthy old-age workers to either improve their health during their working lives or retire earlier if necessary (see Chapter 5). That said, it is clear that designing such a flexible system is challenging, not just because of the measurement issues, but also because of potential moral hazard.

Mortality-adjusted indicators of aging

Calculating the mortality-adjusted age first requires the crude death rates of a country or region over a certain period. Indexing a crude death rate of 10.1 per 1,000 individuals (1950–1955) to the value of 100 leads to a crude death rate of 9.9 per 1,000 individuals (1955–1960) being equivalent to a value of 97.6. Having calculated the indexed values for the entire series (1950–2020) gives us a “mortality index,” which summarizes the changes in mortality rates over a certain period. On the basis of the mortality index, biological age can be calculated from chronological age using the following formula:

$$\text{biological age} = \text{chronological age} \times \left(\frac{100}{\text{Mortality Index}} \right)^{-1}$$

$$\text{biological age} = \frac{\text{chronological age} \times \text{Mortality Index}}{100}$$

Note that there is a positive relationship between the mortality index and biological age: once mortality rates fall, for any given chronological age, people become biologically younger than their ancestors.

Japan's "adjustment approach" to the future of retirement

Masa Higo

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A successful retirement system would enable older people to continue working as long as they desire to secure their socioeconomic well-being without institutionally constraining their opportunities and decisions. At a national level, it would mitigate the impact of anticipated workforce shortages and fiscal insolvencies of social security programs, including old-age public pension programs. Japan is the world's forerunner of population aging. The country seems not only to be headed in the right direction; but it may even exemplify a variation of retirement reforms for other countries to follow. For Japan to fully develop a successful retirement system that is sustainable for decades to come, however, it must take urgent action to effectively incorporate women into this future scenario.

Amid a global search for effective retirement reforms, two notable trends have emerged over the past few decades. First, the USA, the UK, Australia, New Zealand and most recently Canada have fully abolished employer practices of mandatory retirement as part of the efforts to remove institutional barriers to working beyond conventional retirement ages. Second, an increasing number of countries, particularly in Latin America and Eastern Europe, have privatized – fully or partially – their traditional pay-as-you-go public pension programs, aiming in part to provide individual workers with stronger incentives to remain in the labor force as long as possible.

The rest of the aging world might assume that it is simply inevitable for a hyper-aged Japan to swiftly join these emerging trends. Even today, however, mandatory retirement is widely prevalent across the country, with 60 being the most common age to force retirement. Despite various adjustments to the pension system over the past three decades, the government is still committed to this traditional framework characterized by redistributive and intergenerational support mechanisms. Instead, while still permitting mandatory retirement, current law pressures employers to rehire post-mandatory retirement

workers, although possibly for reduced wages, and retain them at least until age 65. Moreover, this is expected to increase to age 70 in the future. Without challenging the pay-as-you-go framework, the government has until now only announced that it would consider raising the minimum age from 65 to 70 to start receiving pension benefits.

Overall, Japan will likely pursue a successful retirement system, at least in coming decades, primarily through carefully and incrementally adjusting – rather than abolishing – age criteria used in the conventional pension systems. This "adjustment approach" goes against the global course to establish an "age-free" society as the timing of workers' retirement is still institutionally determined. But it will also institutionally enable them to remain socioeconomically active longer than in the past. If successfully sustained in the future, the traditional pension system will also protect citizens from major shortcomings of privatization models, including great inequalities in retirement life.

In order to realize a successful retirement system for all citizens in Japan, the country needs to urgently and effectively address its enduring policy agenda: supporting women's working lives. The country's workplace remains largely male-dominated and has struggled with helping women, particularly working mothers, to maintain a reasonable work-life balance. While pursuing the adjustment approach described above, it is in this policy area surrounding women in the labor market that the country must make swift and drastic reforms to its traditional institutions and cultural legacies. Women in Japan are among the healthiest and most educated populations by international standards. The future of retirement in Japan will only be successful in reality if women of all ages are effectively brought into the country's ever-aging and shrinking workforce in order to enhance their socioeconomic well-being and to sustain the country's economic vitality in the future.

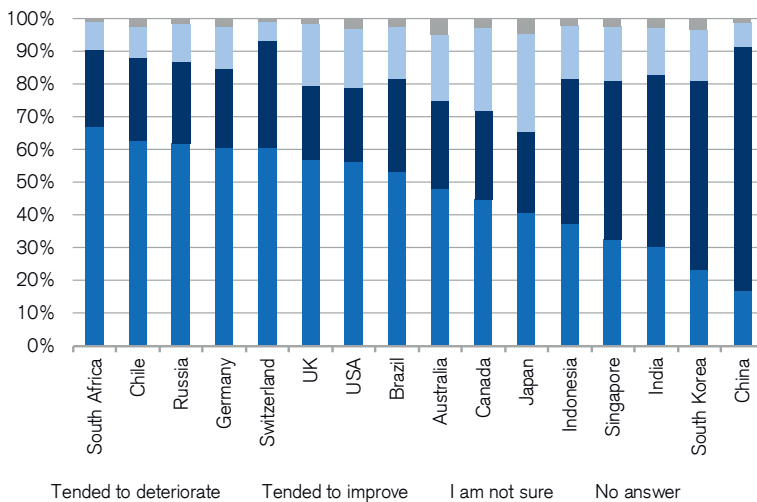


4. Attitudes toward retirement

Can traditional retirement systems adequately and sustainably support people in old age? How concerned are various generations about their material well-being during retirement? Will working for longer become the savings plan of the future? A cross-country survey sheds light on these issues.

Figure 1: Has social security in your country tended to improve or deteriorate in the last ten years?

Share of respondents by country



Source: Credit Suisse Progress Barometer Survey 2019/2020

Not-so-great expectations

Population aging and its consequences for old-age provision, healthcare, the labor market and ultimately economic growth are well known. But how do those directly affected view these developments and what expectations do younger generations have for retirement and life in old age? Based on a survey in 16 countries, we have tried to assess the attitudes toward retirement and related issues from the point of view of retirees and soon-to-become retirees on the one hand and young people on the other. The questions were part of the comprehensive Credit Suisse Progress Barometer Survey 2019/2020, a representative poll conducted online to determine how people perceive progress and their country's future sustainability (see Box on the following page).

Overall, concerns are growing around the world about the quality and sustainability of social security. In developed countries, 53% of respondents stated that, in the last ten years, social security in their country has tended to deteriorate (**Figure 1**). The proportion of pessimistic answers is only slightly lower in developing countries (43%). However, the fact that 42% of respondents think that social security has actually improved – in developed countries, only 26% share this view – shows

that social security systems are still maturing in some developing countries and that perceptions can differ.

Of the countries included in our survey, concerns are most pronounced in South Africa, where 67% of respondents perceived a deterioration in social security over the last ten years. While more than 80% of people above retirement age are in fact receiving a pension, replacement rates are very low and the country does not rank well with regard to future sustainability either, which helps to explain the pessimistic attitude. In contrast, the relatively high proportion of respondents attesting a deterioration of the systems in countries like Germany and Switzerland (both 61%) possibly arises from the recognition and perception that their systems need to be reformed in the direction of higher sustainability, lower pensions and higher retirement age.

Income situation during retirement years

People do not know how long they will live and can quickly feel insecure about their ability to support a (very) long life. Rising living costs or unanticipated medical expenses can derail years of retirement preparation. Similarly, the prospect of low pension benefits as a result of inadequate or unsustainable pension systems, or patchy working careers can be a source of concern.

According to our survey, almost half of the respondents in both developing and developed countries (46% and 49%, respectively) are either very or somewhat insecure about whether they will have enough money to live comfortably throughout their retirement years (**Figure 2**). In developed countries, the overall assessment is slightly more pessimistic. This perception possibly stems from growing concerns about the need to reform pension systems in those countries. It also underlines the subjectivity of these matters: welfare perceptions are strongly determined within a society and do not always reflect the “objective” cross-societal reality. As for the differences between men and women, women have, on average, greater concerns than men regarding their financial situation in old age (**Figure 3**). Earnings gaps, shorter employment careers and lower pension coverage might explain this result.

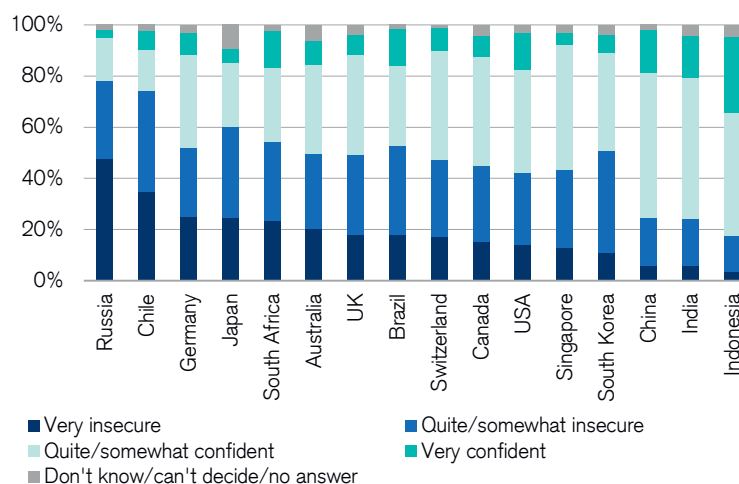
Credit Suisse Progress Barometer Survey

To mark the 200th anniversary of the birth of its founder and true visionary Alfred Escher, Credit Suisse launched a so-called Progress Barometer in 2018. This representative survey attempts to measure the capability for progress in the areas of economy, society and politics, and details projects and issues that people most want to move forward as well as the areas in which respondents would prefer progress to slow down. After a first edition limited to Switzerland, the survey was extended last year to 15 more countries for the purpose of a global comparison of the perception of progress. The survey was conducted online in September, using a representative sample of 1,000 voting-age respondents for each country. In the case of Switzerland, about 460 opinion leaders were surveyed as well. These persons exert an influence beyond their own immediate environment in a political, cultural or entrepreneurial sense.

The Progress Barometer is the latest member of the Credit Suisse barometer family. Together with the Worry Barometer, the Youth Barometer and the Europe Barometer, the Progress Barometer amounts to a comprehensive demographic information system to take the pulse of the population.

Figure 2: How confident are you that you will have enough money to live comfortably throughout your retirement years? – country perspective

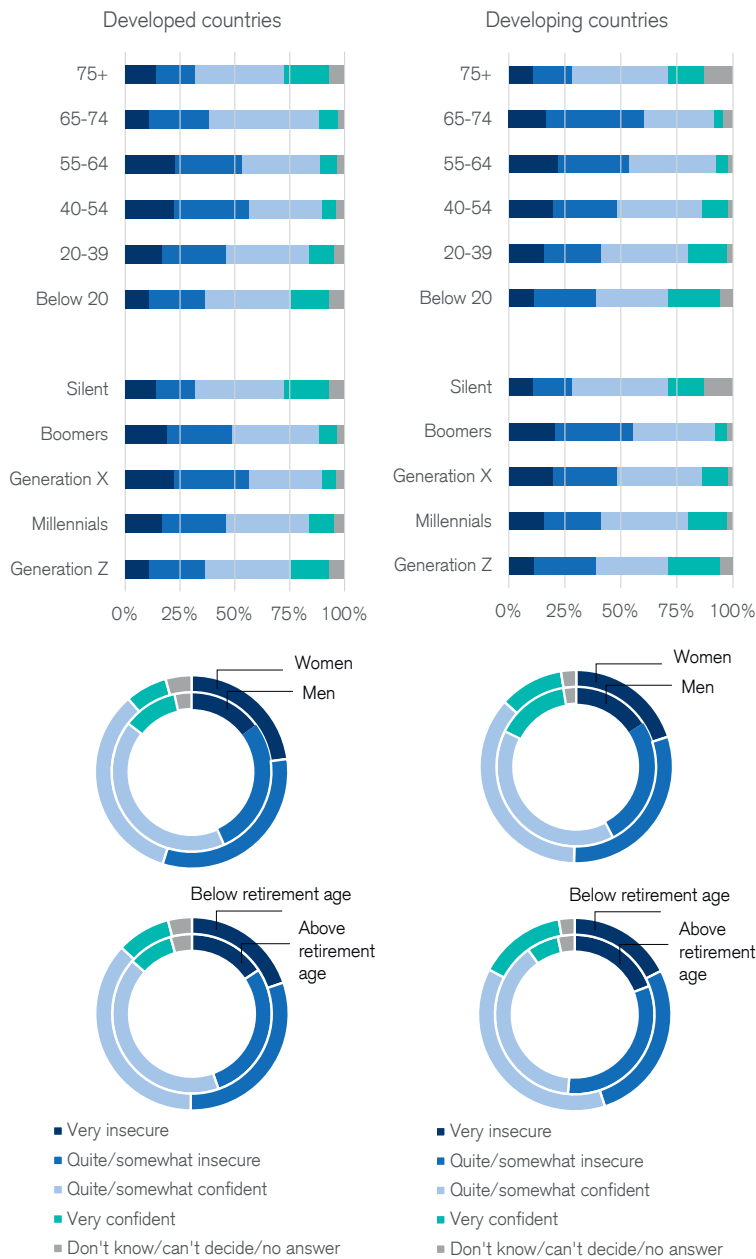
Share of respondents by country



Source: Credit Suisse Progress Barometer Survey 2019/2020

Figure 3: How confident are you that you will have enough money to live comfortably throughout your retirement years? – overview

Share of respondents by development level, age, generation, gender and retirement status



Source: Credit Suisse Progress Barometer Survey 2019/2020

Across age groups, concerns seem to be more pronounced for soon-to-become retirees (55–64 years old), with 54% of respondents being either very or somewhat insecure in both developed and developing countries. In contrast, respondents who have already retired are more confident about their income situation, especially in developed countries. This is likely because they are better able to assess their financial means and expenses. Also, in countries with well-developed pension systems, they can take advantage of good coverage. Younger respondents below 20 years of age, the so-called “Generation Z,” are generally more optimistic, with a lower proportion of respondents worrying about the means to live comfortably during retirement – only slightly more than one-third are either very or somewhat insecure. Overall, in terms of behavior, it appears that the closer the retirement date, the greater the concerns. Once uncertainty is removed (as in the case of retirees) or far away (as in the case of young respondents), fears diminish.

Sources of income during retirement

Attitudes toward retirement and the way people perceive the adequacy and sustainability of retirement systems in their countries clearly shape expectations regarding the main sources of income in old age. Not surprisingly, 45% of respondents in developed countries expect retirement provision to be the major source of income during retirement. The corresponding figure for developing countries is 39%. In general, the level is higher in countries with wider pension coverage and/or higher replacement rates (Figure 4).

For respondents who have already retired, the question refers to their current major source of income. Accordingly, in both country groups, the proportion of respondents stating that retirement provision is their major source of income is higher for retirees than for people below retirement age (Figure 5). It is interesting to note, however, that the gap between people in retirement and those who are not is wider in developed countries than in developing countries (17 versus five percentage points).

As mentioned above, people in developed countries seem to be more concerned about the sustainability of their retirement systems. They are aware of the need for painful reforms and have already seen some measures implemented in their own countries. Consequently, their expectations regarding retirement benefits in the future are somewhat lower. Conversely, in several developing countries, retirement systems are still maturing and younger generations expect to achieve better coverage. Retirement provision in these countries has not been a reality for many individuals, and people are generally not used to relying on it.

The results by age group and generation provide additional support for this interpretation. Younger generations are expecting retirement provision to be less important as a source of income than older generations. Compared to developing countries, however, young people in developed countries appear far more pessimistic than their parents and grandparents (Figure 5).

Social benefits generally play a smaller, but not negligible, role as an income source during retirement. In developed countries, 28% of respondents expect to have to rely on such benefits as a major source of income; in developing countries, the proportion is slightly lower (23%). The lines between age groups and generations are less clear for social benefits than for retirement provision. Interestingly, in developing countries, the younger the respondents, the higher the proportion attesting that social benefits will be a major income source in retirement.

Apart from essentially publicly funded sources of income like retirement provisions and social benefits, private sources of income will also play a role in financing old-age living. Personal savings and investments are even expected to become as important as retirement provision as a source of income in the future. About 44% of respondents in developing countries state that they expect personal savings and investments to be their major source of income in old age, with the highest values in countries like Brazil, South Africa and India (Figure 6). In developed countries, the corresponding figure is 40%. Although people in developed countries may have more significant levels of savings and wealth than in developing countries, these assets seem to play a smaller role in financing living during retirement. In both country groups, the relevance of this source of income increases the younger the respondents are.

Figure 4: To what extent do you expect retirement provision and/or social benefits to be a source of income in retirement? – country perspective

Share of respondents expecting income from retirement provision and/or social benefits to be a major source of income by country; retirees: current major source of income

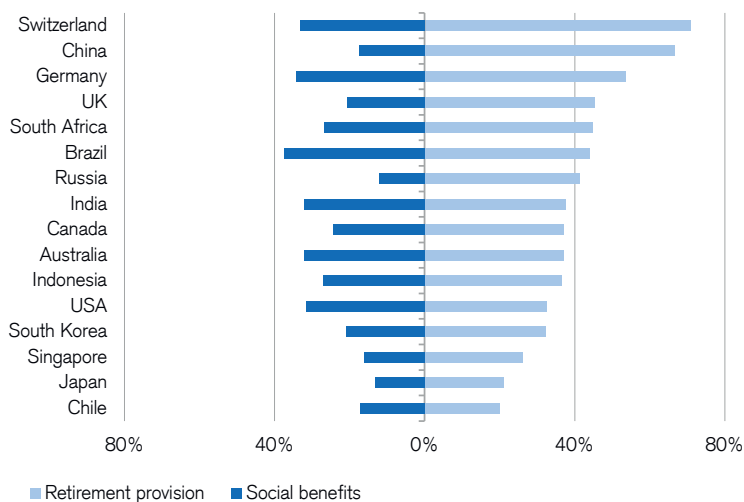
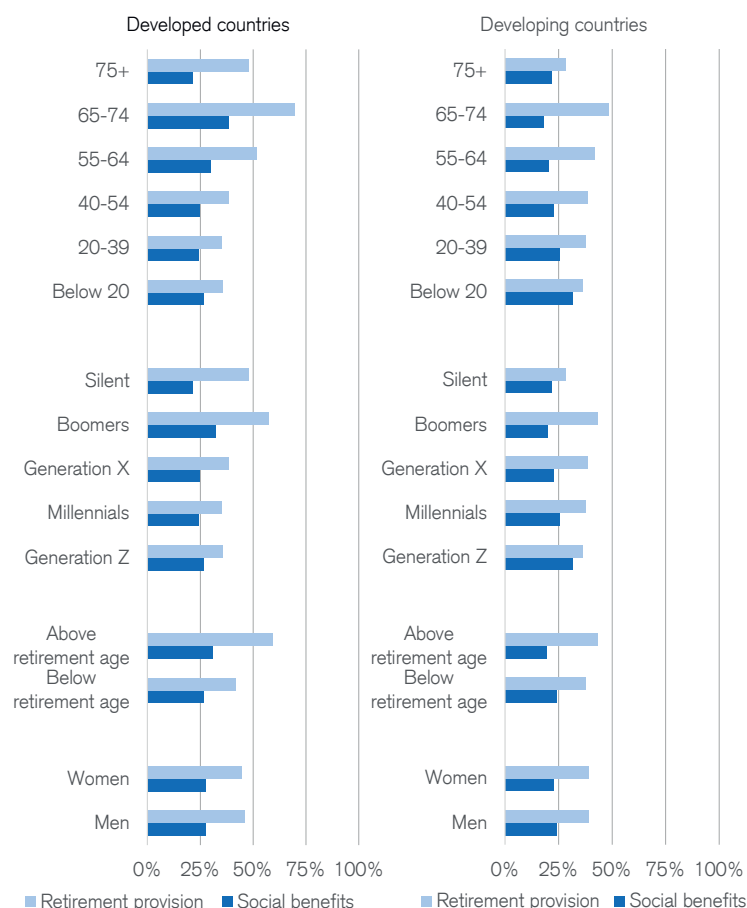


Figure 5: To what extent do you expect retirement provision and/or social benefits to be a source of income in retirement? – overview

Share of respondents expecting income from retirement provision and/or social benefits to be a major source of income by development level, age, generation, gender and retirement status; retirees: current major source of income



Source Figures 4 and 5: Credit Suisse Progress Barometer Survey 2019/2020

Figure 6: To what extent do you expect personal savings and investments and/or income from work to be a source of income in retirement? – country perspective

Share of respondents expecting personal savings and investments, and/or income from work to be a major source of income by country; retirees: current major source of income

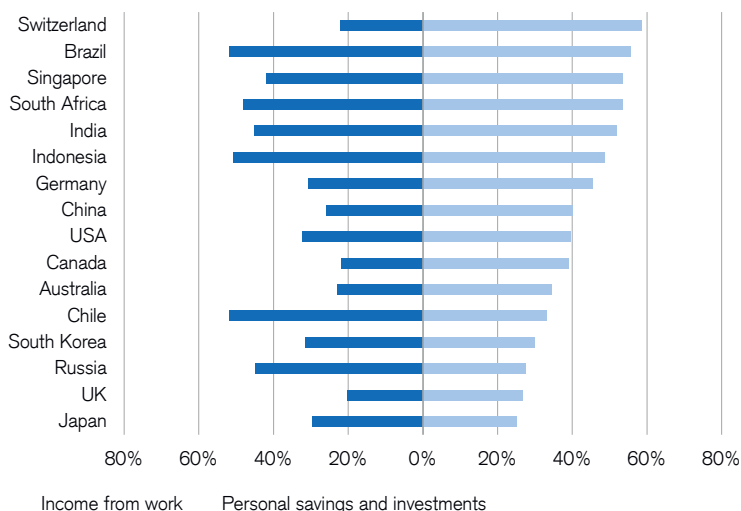
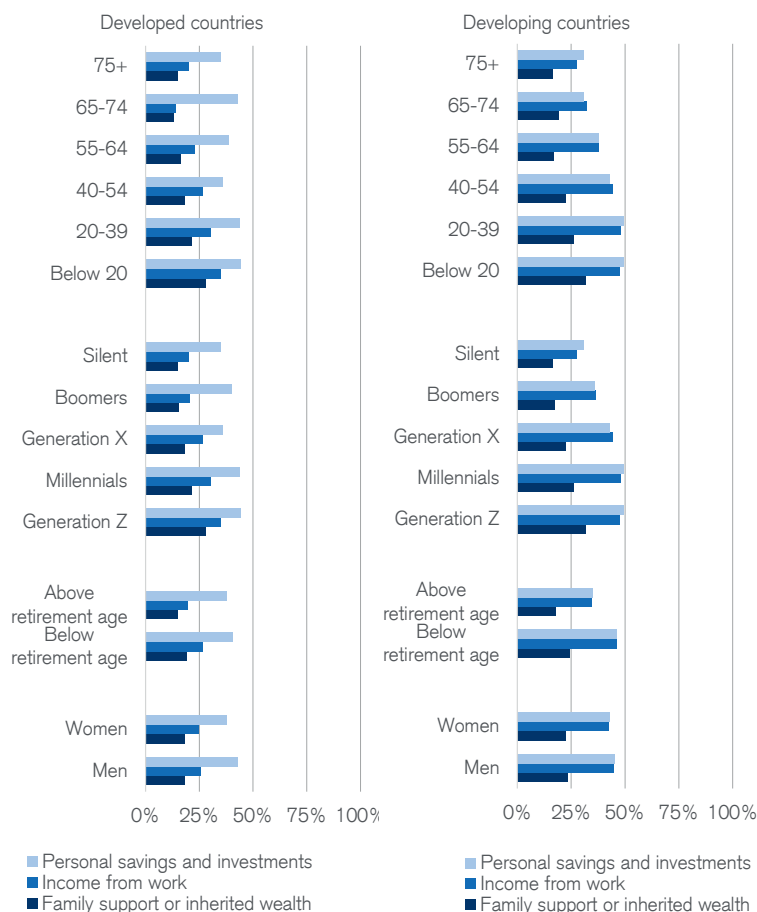


Figure 7: To what extent do you expect personal savings and investments, family support or inherited wealth, and/or income from work to be a source of income in retirement? – overview

Share of respondents expecting personal savings and investments, family support or inherited wealth, and/or income from work to be a major source of income by development level, age, generation, gender and retirement status; retirees: current major source of income



Source Figures 6 and 7: Credit Suisse Progress Barometer Survey 2019/2020

Another important financial source during retirement is income from work. This is clearly more often the case if a country is still developing, with 44% of respondents expecting work to be a major financial source during retirement (Figure 7). In developed countries, this proportion decreases to 25%. As we will see in more detail in the next section, most people in developing countries with low pension coverage and inadequate replacement rates literally need to work until the end of their lives. At the same time, people in these countries are less used to retirement as a work-free stage of life.

Looking at the results by age group, it seems that, for younger generations, longer working years will become the savings plan of the future. In developed countries, 30% of millennials and 35% of Generation Z members expect income from work to be their major financial source during old age (Figure 7). For soon-to-become retirees, the corresponding figure is only 23%. Young generations are also planning to rely more on family support and inherited wealth than their parents and grandparents. On average, 18% of respondents in developed countries expect this source of income to become the major one during retirement, versus 23% in developing countries. This figure increases to 28% and 32%, respectively, for respondents under 20 years of age.

Attitudes toward work beyond normal retirement age

Retirement decisions are very individual. Depending on factors such as financial position, marital status, health conditions or job satisfaction, people may arrive at different conclusions about whether to prolong their working careers. Figures 8 and 9 show how survey participants responded to the question of whether they wish to continue working after reaching normal retirement age.

Countries' development status plays an important role in whether people wish to continue working after reaching retirement age. Specifically, respondents in developing countries display a higher working morale when it comes to extending their working life beyond the normal retirement age compared to respondents in developed countries. Around 53% of respondents in developing countries wish to continue working versus only 28% in developed countries.

Respondents in Germany (18%), Canada (25%) and Switzerland (28%) show the lowest proportion of people who wish to continue working after reaching normal retirement age (**Figure 8**). The most obvious reason is that people in these countries consider themselves to be wealthy enough at the point of retirement and see no need to work beyond it. Conversely, respondents in India (75%), Indonesia (65%) and South Korea (63%) are among the countries with the highest share of people wishing to continue working after reaching normal retirement age. In these countries, not working beyond retirement age is associated with poverty. In India and Indonesia, the coverage rates are relatively low at 25% and 14%, respectively, indicating that the majority of people cannot rely on the pension system to fund a work-free period after retirement. By contrast, South Korea ranks among the countries with the highest relative poverty rate among the elderly (see **Figure 4** on page 47). Hence, for many Koreans, not working beyond normal retirement age may pose a real threat of slipping into poverty.

It is interesting to note that respondents had the choice of selecting the option “I don’t want to, but I (will) have to,” but only 10%–16% of respondents in these countries chose it. In India or Indonesia, this can be explained by the fact that work-free periods are not a reality for most people. Hence this is a question that does not come up very often. Most people in countries with low pension coverage or insufficient pension schemes literally need to work until the day they die. That said, the question above takes on another dimension. Accordingly, many respondents wish to work beyond normal retirement age because the alternative option of not working into old age is synonymous with poverty. They do not see this as being forced to work longer because they do not know any different.

When comparing age groups, an interesting pattern arises (**Figure 9**). The younger the people in developed countries, the more they wish to continue working after reaching normal retirement age. They also expect income from work to become a major financial source during retirement (**Figure 7**). Conversely, the younger the people in developing countries, the less they wish to continue working beyond retirement age. They possibly expect to achieve better coverage once the retirement systems in their country have matured. Overall, however, Millennials and Generation Z are most undecided when asked about wanting to work beyond normal retirement age, which strengthens the stereotype of these two generations. At the same time, one might say that the younger the people, the less likely they are to be informed about the topic and therefore have no opinion on it.

Figure 8: Do you wish to continue working after reaching the normal retirement age? – country perspective

Share of respondents by country

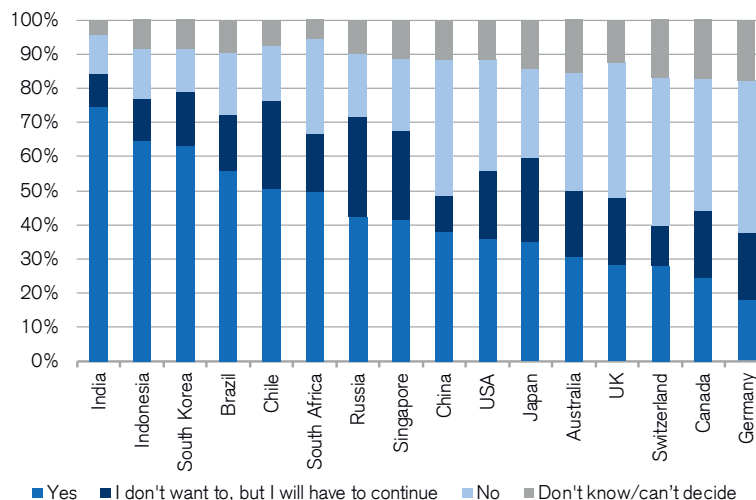
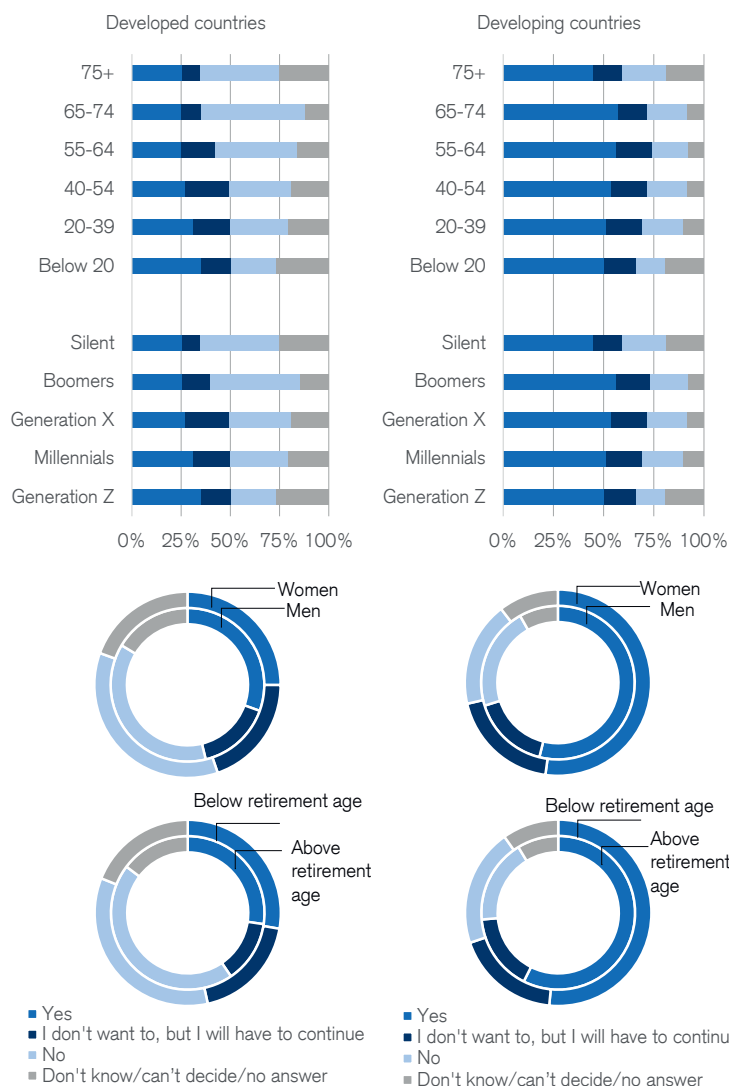


Figure 9: Do you wish to continue working after reaching the normal retirement age? – overview

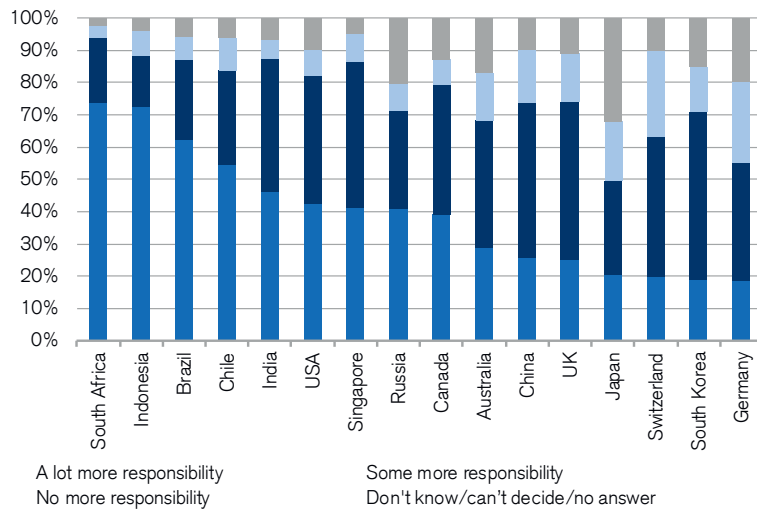
Share of respondents by development level, age, generation, gender and retirement status



Source Figures 8 and 9: Credit Suisse Progress Barometer Survey 2019/2020

Figure 10: Do you think individuals should take on more responsibility in managing retirement savings? – country perspective

Share of respondents by country



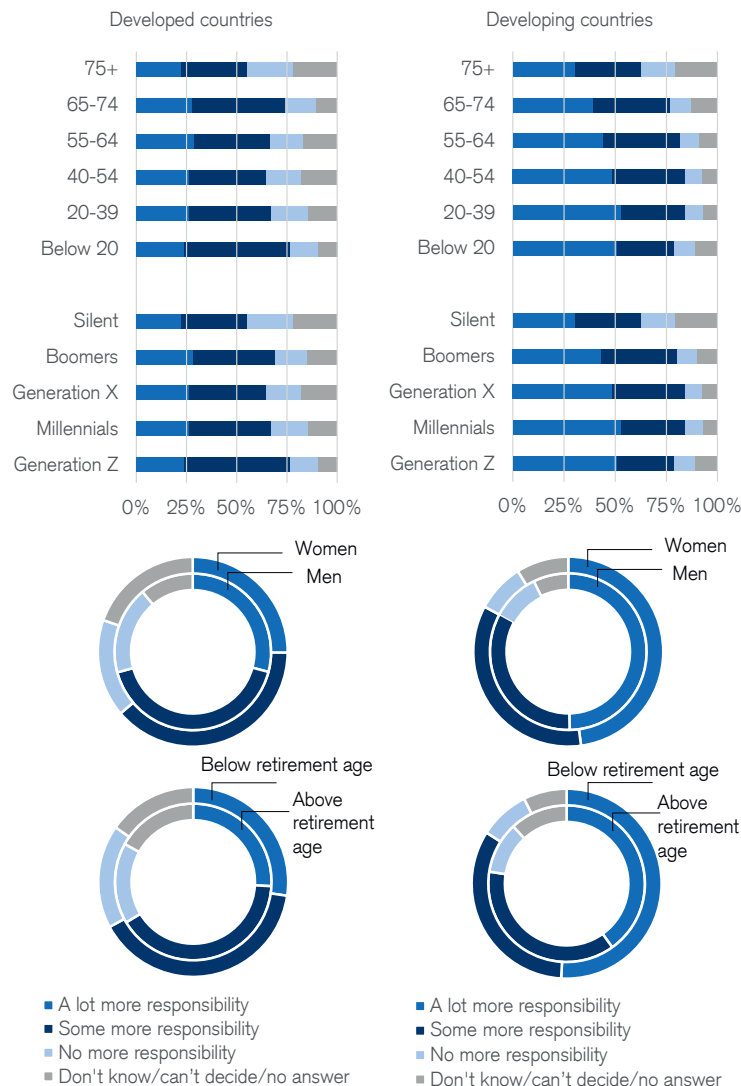
There is little difference between men and women in both developing and developed countries. About 31% of men and 25% of women wish to work beyond retirement age in developed countries, compared to 54% and 52% in developing countries, respectively. Retirement decisions between men and women can differ depending on the family situation, the health of individuals, and the reliance of the household on additional income.

Responsibility in managing retirement savings

People face several challenges when planning for retirement, which vary according to the type of pension arrangement. In many OECD countries, the growing role of funded private pension schemes relative to pay-as-you-go public pensions in retirement income provision means that individuals must increasingly take responsibility for their retirement as well as make a range of decisions and assume risks related to retirement saving (OECD, 2018a). Besides having a basic understanding of the system (e.g. the level of mandatory contributions, eligibility rules and the way benefits are calculated and taxed), people also need to know how potential risks like unemployment, financial turmoil or inflation can influence the level of retirement benefits. Moreover, they need to understand the need for pension reforms and their consequences.

Figure 11: Do you think individuals should take on more responsibility in managing retirement savings? – overview

Share of respondents by development level, age, generation, gender and retirement status



But do individuals really wish to take on more responsibility in managing their retirement savings? According to our survey, this is more often the case in developing countries than in the developed world. In developing countries, 49% of respondents believe that individuals should take on much more responsibility in managing retirement savings; another 34% say they would take on some more responsibility. In developed countries, the proportion of respondents who wish to assume much more responsibility is clearly lower at 27%, whereas 40% are ready to assume some more responsibility (Figure 10).

From a cross-country perspective, it is interesting to note that the retirement systems in countries where people wish to take on more responsibility, are generally not among the better-rated systems according to the Mercer Index (see Figure 3 on page 19). In South Africa and Indonesia, for instance, where replacement rates and/or pension coverage are very low, more than 70% of respondents wish to take on more responsibility in managing their own retirement savings (Figure 10). A lack of confidence in poorly functioning retirement systems could explain this result. On the other side of the spectrum, one finds countries like

Source Figures 10 and 11: Credit Suisse Progress Barometer Survey 2019/2020

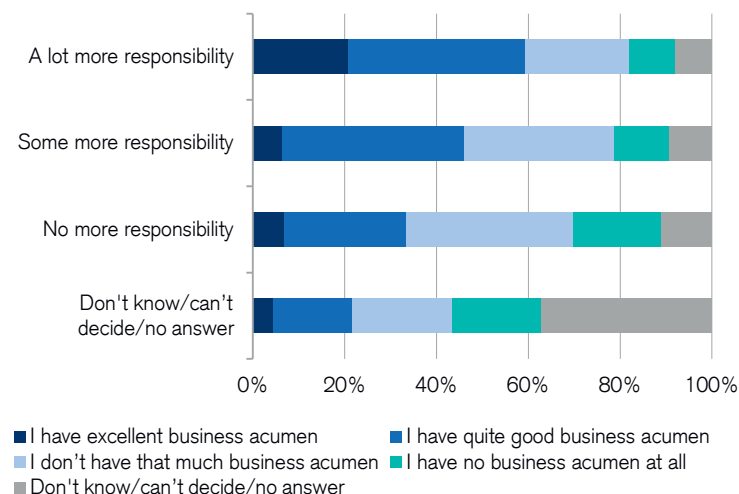
Switzerland and Germany with mature retirement systems, where the proportion of respondents ready to take on much more responsibility decreases to about 20%. Do people in these countries feel that they already take enough responsibility, or do they shy away from potential risks or wrong decisions because they are generally well off and do not need to optimize further?

Similarly, in developed countries, younger people do not seem to want more responsibility compared to older people, at least not much (Figure 11). By contrast, in developing countries, the younger the respondents, the higher the proportion wishing to take on more responsibility in managing retirement savings. This gap between generations is also very clear when comparing people below retirement age with those already retired.

The ability to manage one's own retirement savings requires a certain level of economic and financial knowledge. Only with such knowledge can individuals make decisions in line with their specific needs to enhance their retirement benefits. It is therefore not surprising that, in our survey, the desire for more responsibility in managing retirement savings correlates strongly with the business acumen of respondents, a variable that can be seen as a proxy for the more narrowly defined financial literacy (Figure 12). Among the respondents asserting that they would like to take on much more responsibility in managing their own retirement savings, 39% have relatively good and 21% have excellent business acumen. Among those who prefer to avoid more responsibility, many do not have much business acumen (36%) or have none at all (19%).

In light of these results, the transition to retirement schemes that require individuals to assume more responsibility and risks may prove problematic. To tackle the issue, the OECD has developed recommendations and frameworks to promote financial education, both for adults and young people. Adequate levels of financial literacy among the general population, however, will take some time to materialize. There is therefore a need for other approaches like improving the design of retirement systems (OECD, 2018a).

Figure 12: The higher the knowledge level, the more pronounced the desire to manage one's own retirement savings
Share of respondents by level of business acumen



Source: Credit Suisse Progress Barometer Survey 2019/2020

The hidden market advantage of being over 50

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Managing Director at Lee Hecht Harrison Switzerland

With population aging and the shortage of skilled workers, everyone in the workforce becomes important. Since fewer young people are entering the labor market, the integration of senior workers will become crucial in the future. Nevertheless, older workers are still considered less attractive, although they bring high potential, motivation and skills. The prejudices in our society may lead to a loss of self-confidence among older workers looking for a job. A study we conducted among approximately 1,700 job seekers in Switzerland who were supported by a career transition or outplacement program following dismissal in 2017 shows this clearly. Around 86% of those surveyed believe that people over 50 are disadvantaged in the Swiss labor market – even though most of them did not experience it themselves. Many outplacement candidates therefore massively lower their expectations after just a short job search.

In our experience, the prospects of successful re-employment for people over 50 are not worse than for younger people. On average, re-employment only takes two to three months longer. However, one should not wait too long after dismissal to get started. People who start thinking early about the next chapter of their career are more likely to be successful. In this context, support from an outplacement or career transition program immediately after a dismissal has a positive effect on the success of older job seekers.

Further education and skill development play a key role in maintaining employability. Several studies have shown that older workers are generally less willing to invest in further education. However, our study shows that respondents clearly recognize that they should invest in the development of new skills and in networking. This suggests that only drastic experiences such as dismissal make people realize the importance of training for employability. It is also interesting to note that the respondents do not necessarily recommend wage flexibility, but rather flexible forms of work and the rethinking of one's own profile. In fact,

digitalization and the new economic reality combined with a new desire for flexibility have given space for new ways of working. These could act as a catalyst to enhance the employability of older workers on the labor market. Whether it is part-time, freelance or self-employment, these new forms of work need to be embraced and treated like standards.

Existing instruments such as “bow careers” (where an employee's workload or responsibilities are reduced shortly before retirement) or public grants for on-the-job training are not well known and hardly used. Grants provide financial relief for companies that offer job seekers the opportunity to acquire the necessary skills. Only 5% of the respondents in our survey were familiar with these instruments. This is possibly because such practices are not sufficiently in line with social trends. Bow careers are still hardly accepted. From the point of view of those affected, such a career path bears the risk of lowering their standing in society. Older employees are also often advised against accepting a reduction in salary. As a result, job seekers do not accept interesting job opportunities and remain unemployed for a longer time.

To sum up, future skills, integration of the senior workforce and alternative forms of work are the key success factors to ensure the sustainable competitiveness of the labor market, in Switzerland and abroad. Continuous up- and reskilling and a timely offering of robust career coaching to laid off employees, particularly older workers, must be considered an integral part of employers' responsibilities. Every person, for their part, is an actor in their professional life, responsible for shaping and strengthening his/her own professional perspective by continuously learning and not waiting for a dramatic event like a job loss to realize the need for proactivity. As regards the state, a flexible retirement age combined with the right incentives and a proper consideration of the new forms of work within the retirement system should be a priority.



5. The changing face of retirement

For much of human history, life has consisted of two stages at most: education and work. It is only during the past century that retirement has completed the three-stage lifecycle in many countries worldwide. With life expectancies on the rise, the traditional three-stage path may not suit the new reality. Enabling new life paths brings new challenges.

Reconsidering traditional career paths

In light of rising life expectancies, delaying retirement – or prolonging working lives – seems a suitable way to help alleviate the strain on pension systems worldwide. Current data on effective retirement ages and labor force participation rates of older people show that a shift toward a later exit from the labor market is actually already taking place to some extent in most developed economies. There are significant differences between countries, however, and the participation of older people in the workforce remains low in many places, suggesting that often there is still scope for reforms to encourage longer working careers.

Increasing the retirement age would appear to be the most obvious policy instrument to make people work longer. As seen in Chapter 2, several countries have already taken such a step in recent years or are planning to do so. Countries such as Denmark and the Netherlands have linked retirement age to life expectancy. However, raising the retirement age is often a controversial and highly debated issue. This highlights the need for additional measures to motivate older workers to remain in the labor force longer, and encourage firms to employ them. Moreover, policies need to ensure appropriate working conditions at all ages in order to improve social

acceptance of an increase in retirement age. When reforming pension systems, policymakers should also take into account the fact that the traditional concept of the three-stage lifecycle with retirement as a fixed career endpoint is being increasingly blurred by transformations in the working world caused by technology and more flexible work arrangements such as part-time or temporary employment. Traditional career paths thus need to be reconsidered in order to maximize the advantages of longevity.

Working past traditional retirement age: An assessment of the current situation

Before looking at ways to promote longer working careers, let us first assess the current situation in different countries. The “average effective age of labor market exit” is an indicator often used to approximate the average effective retirement age in a country.¹ Across the OECD and EU member countries, labor market

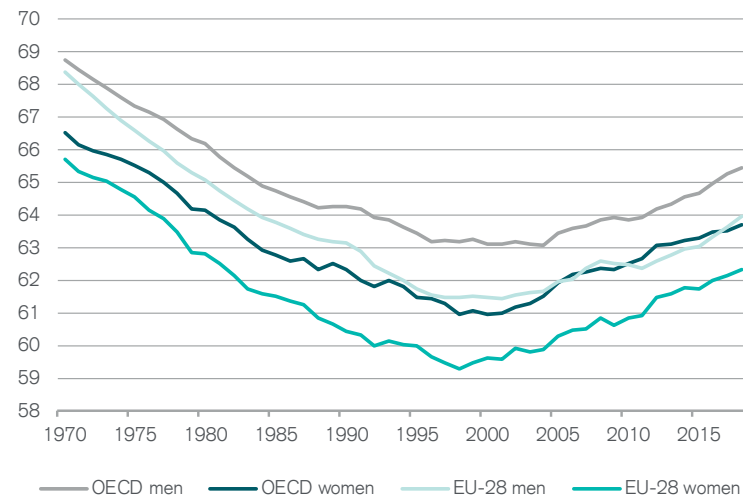
1. Formally, the exit age from the labor force and the effective retirement age are not necessarily the same, as people may leave the workforce without receiving retirement benefits or, on the contrary, retire – thus receiving pension benefits – while continuing working. The OECD defines the average effective age of labor market exit as the average age of exit from the labor force for workers aged 40 and above over a five-year period (e.g. 2013–2018).

exit ages have increased on average since the turn of the 21st century, after falling constantly for several decades (Figure 1). The increase was more pronounced for women, with an average gain of approximately 2.8 years in the OECD between 2000 and 2018, compared to 2.3 years for men over the same period. But, despite the increase in exit ages registered in the last decades and higher life expectancies, the average effective retirement ages in OECD and EU countries remain well below their levels in 1970. In OECD countries, men currently retire from the workforce at an average age of 65.4 and women at 63.7. In EU countries, the average labor market exit ages are even lower at 64.0 for men and 62.3 for women.

The situation across the different countries is anything but homogeneous, however, as shown in Figure 2. In South Korea, the average effective age of labor market exit was 72.3 for both men and women in 2018 – the highest value among OECD countries. In Japan and Chile, as well as in non-OECD developing countries like Indonesia and India, men work on average until around 70 or above. Portugal and Iceland register the highest values in Europe, with an average effective retirement age above 68 for men. The USA is just behind with an exit age of just under 68. At the other end of the scale, French men quit the workforce at 60.8 on average, i.e. more than seven years earlier.

Figure 1: Effective retirement age on the rise in advanced economies since the beginning of the 21st century

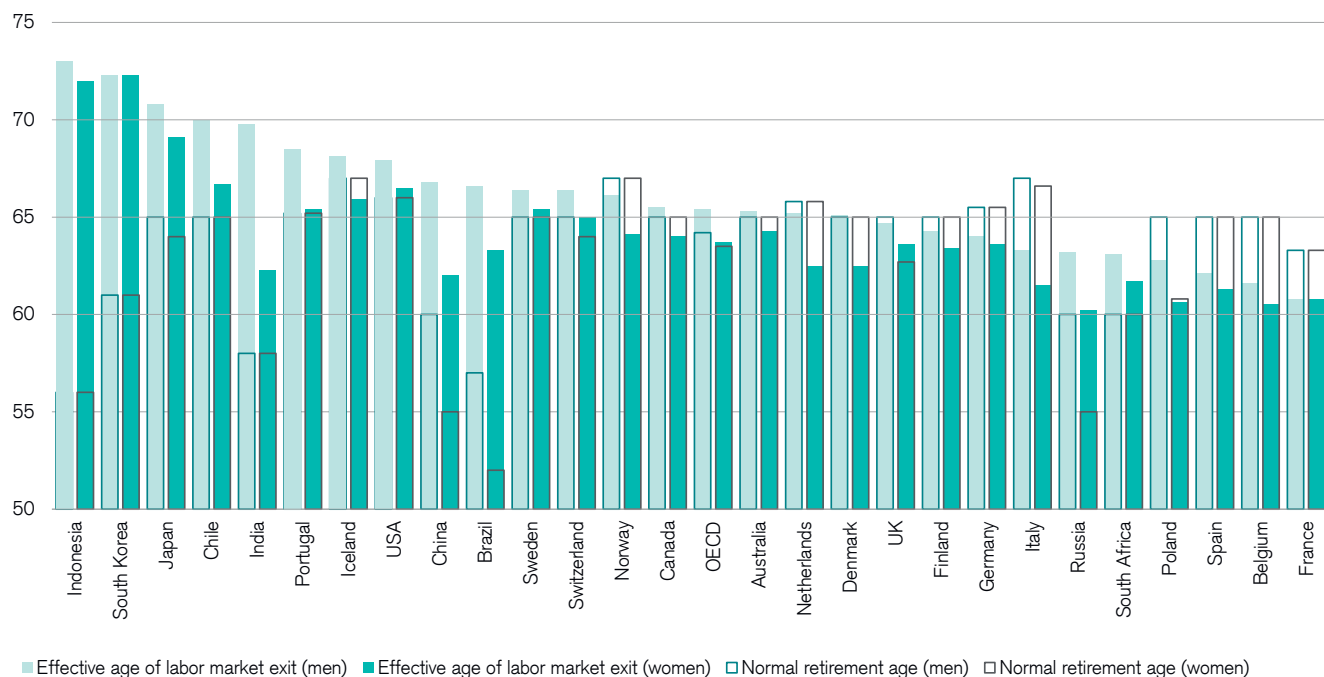
Average effective age of labor market exit, average of OECD and EU countries, 1970–2018



Source: OECD, Credit Suisse

Figure 2: Significant differences across countries in the effective retirement age

Average effective age of labor market exit vs. normal retirement age, 2018



Source: OECD, Credit Suisse

The differences between the countries cannot be explained solely by differences in the normal retirement age (**Figure 2**). In some countries, people on average work beyond (and sometimes well beyond) the respective normal retirement age.² The difference between the average effective and the normal retirement age is almost ten years or more for men and women in Brazil and South Korea, and for men in India. It even amounts to 16–17 years in Indonesia. In other (mostly European) countries, the average effective retirement age is, in contrast, (well) below the normal retirement age. The largest negative discrepancies are registered in Italy (–3.7 years for men, –5.1 for women), followed by Belgium (–3.4 years for men, –4.5 for women).

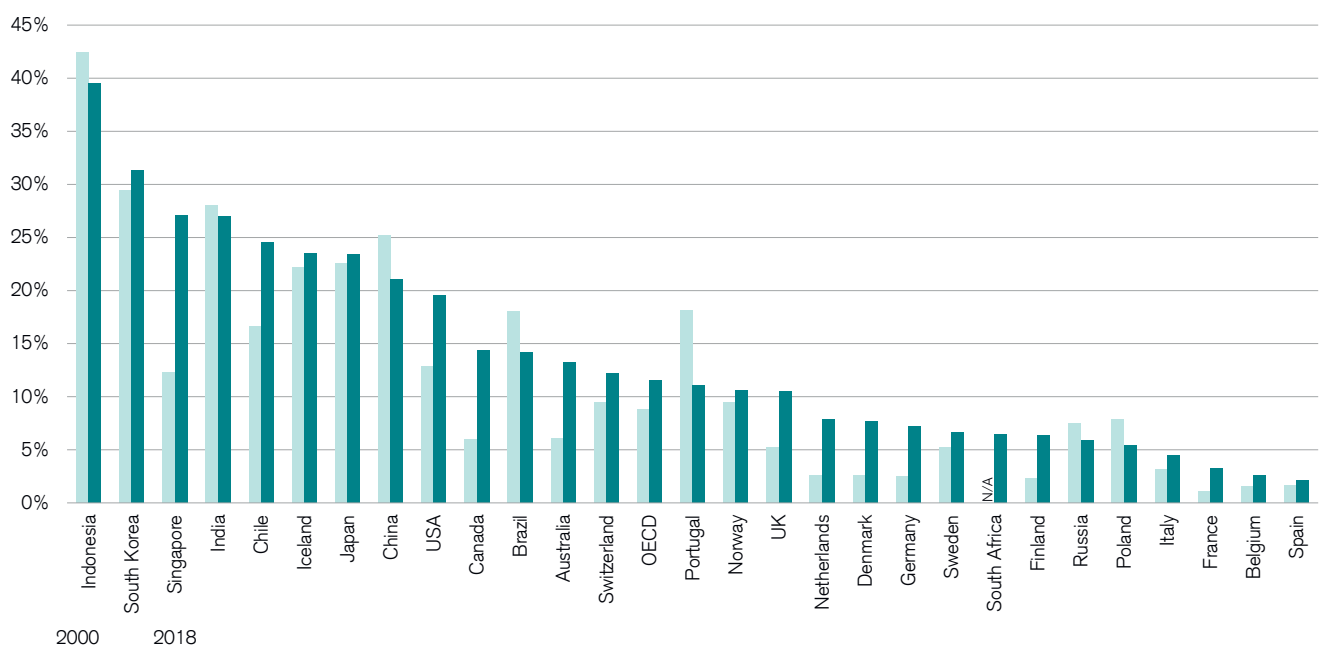
Data on the labor force participation rate of older people shows a similar picture, with significant differences between countries (**Figure 3**). In Indonesia, around 40% of the people aged 65+ are still in the workforce, according to the International Labour Organization (ILO). Conversely, only 3% or less of French, Belgian and Spanish people stay in the workforce past the age of 65. Here again, differences in the normal retirement

age are only part of the explanation for the variance across countries. For example, Iceland and Norway both have the normal retirement age set at 67, the highest normal retirement age in the OECD, but the labor force participation rates of people aged 65 and over differ by nearly 13 percentage points between the two countries (23% in Iceland, 11% in Norway). And there are several countries where the labor force participation rate of older people is high despite a relatively low normal retirement age. The latter is at 56 in Indonesia, 61 in South Korea, 58 in India and 60 in China. Nevertheless, in all of these four countries, between 20% and 40% of the people aged 65 or above are still in the workforce, compared with the OECD average of 11%. Conversely, this rate was under 5% in Italy in 2018, despite a normal retirement age of around 67.

Although the levels remain low in some places, an increase in the labor force participation rate of older people has been observed since 2000 in most countries under review (**Figure 3**). Notable exceptions are Portugal, Brazil, Indonesia and Poland, as well as Russia and India to a lesser extent.

2. Defined as the age at which individuals with an uninterrupted career from age 22 are eligible for full retirement benefits without penalties (OECD, 2019b).

Figure 3: Labor market participation of older people generally increased, but remains low in some countries
Labor force participation rate of people aged 65+, 2000* and 2018**



* except South Africa (N/A); ** except South Korea and Indonesia (2015)

Source: ILO, Credit Suisse

What drives labor force participation beyond retirement age?

As already mentioned, changes and differences in the normal retirement ages are just part of the explanation for the disparities in the labor force participation of older people across countries and over time. Various other factors can influence an individual's decision or ability to continue working past a certain age. Some of these are personal and others are linked to the specific policies or the general economic and social environment. There are also variations over time.

Pension systems and their features play a key role in this respect. Depending on pension coverage (whether a person receives retirement benefits at all) and replacement rates (how much of the previous income pension benefits cover) in the specific country, older people will have a greater or lesser need to continue working beyond the normal retirement age. Next to the normal retirement age, rules governing early and deferred retirement (minimum and maximum age, financial penalties and bonuses, etc.) may also influence the effective retirement age. Pension reforms carried out over the past decades in many OECD countries, raising eligibility ages and closing or at least tightening early-retirement schemes, are among the main drivers of the general increase in average effective retirement ages and labor force participation of older people shown above (OECD, 2019a).

The design of **other welfare programs** can also have an impact on the labor force participation of older workers. This is the case, for example, where age-based rules in unemployment or disability schemes act as an incentive for older recipients to stay out of the labor force until they reach retirement age instead of going back to work if they are able.

Where pension benefits are insufficient to sustain people and their families (or to attain the desired standard of living), the decision to continue working past the normal retirement age also depends on the **availability of alternative income sources** such as personal savings and investments, family support, inherited wealth or social benefits (see Chapter 4).

Health is another relevant factor determining labor force participation of older workers, as are **working conditions and job satisfaction**. Hence, the growth in the share of service employment (i.e. generally less physically strenuous tasks) in total employment over the last decades has probably contributed to the increase in labor force participation rates of older people in the OECD over this period.

In some cases, people may be willing to continue working (well) past the traditional retirement age, but are not offered **the possibility to do so by employers**. Many OECD countries still have so-called mandatory retirement rules that allow employers to “force” employees to retire past a certain age (OECD, 2017). Factors weighing on the cost-benefit ratio of employing an older person, such as seniority wages, age-based social insurance contributions by employers, special employment protection for older employees, etc., may reduce the incentive for firms to retain or hire them. The lower perceived productivity of older workers is also often an issue. We will come back later to the key role **education and further training** play in this context.

Postponing retirement today: A choice or a necessity?

The weight of the different factors mentioned above on the labor force participation of older people varies from country to country (note that the list is not comprehensive). However, for the sake of simplification, the different countries can be roughly divided into three groups, although the distinction is not always clear-cut:

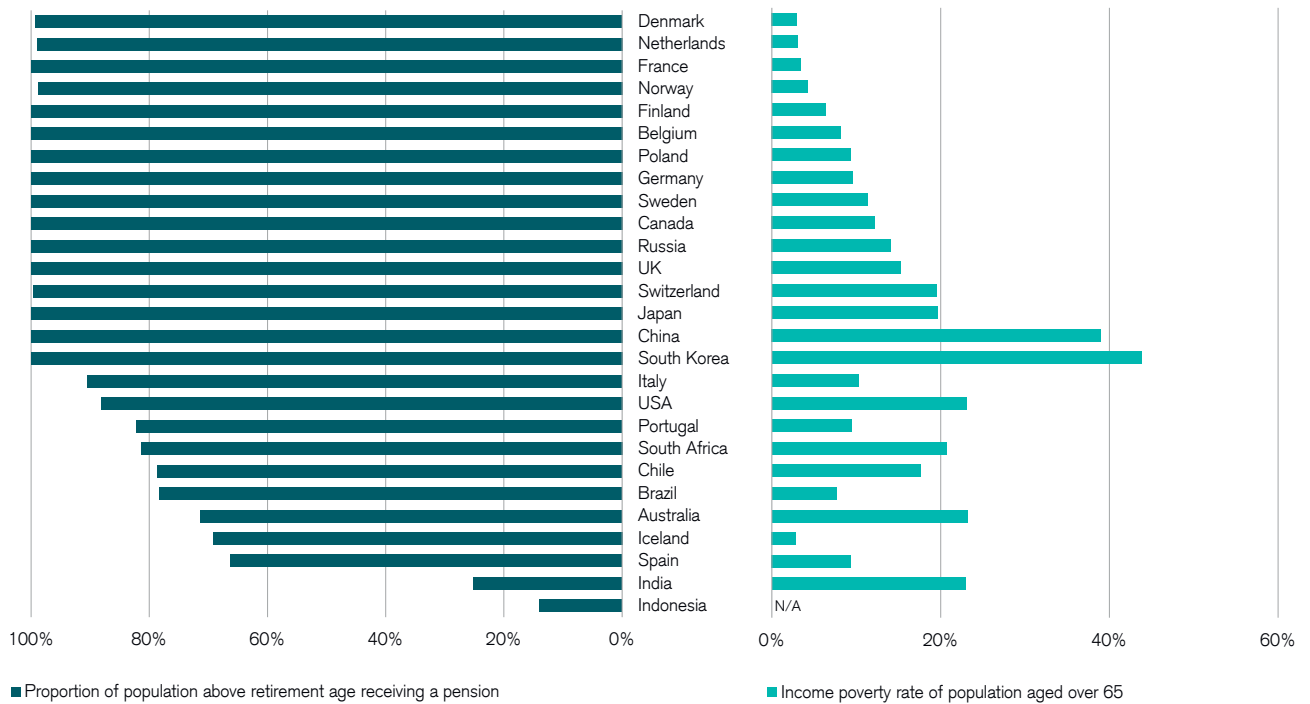
1. In developing countries where pension systems are underdeveloped or still maturing, and pension coverage is low as a result, many people have no choice but to continue working into older age to sustain themselves and their families, leading to comparatively high average effective ages of labor market exit and labor force participation rates of older people. Indonesia and India are two prime examples for this group in our selection of countries. According to data from the International Labour Organization, only 14% of the people above retirement age in Indonesia received a pension in 2016 and 25% in India (**Figure 4**). In this group of countries, the three-stage lifecycle as more developed countries know it – education, work, retirement (see Box on page 28) – does not really exist for a large part of the population. The “retirement” phase is mostly short or even non-existent in some cases. In Indonesia, for example, the remaining life expectancy at the average effective age of labor market exit is below ten years.³ By comparison, this figure is close to 25 years in France.

Hence, in this group of countries, the question of whether someone wants to continue working beyond retirement age often does not even arise. This is best illustrated by the survey results presented in Chapter 4, according to which around three-quarters of the respondents in India and two-thirds in Indonesia answered

3. Life expectancy at age 75 was 8.3 years in the period 2010–2015, according to UN estimates.

Figure 4: Pension coverage and old-age poverty rates in a country comparison

Proportion of population above retirement age receiving a pension, 2014*; relative income poverty rate of population aged over 65, 2016**



The old-age income poverty rates show the proportion of people aged 65 or above living on incomes of less than half the median equivalized household disposable income in a country (OECD, 2019b). Note that income poverty measures do not take account of wealth, therefore possibly overestimating the occurrence of old-age poverty in cases where retirement capital is paid in a lump-sum upon retirement. This helps to explain, for instance, the comparatively high poverty rate in Switzerland.

* except Brazil, Canada, Chile, Germany, India, Indonesia, South Africa (2016), China, Russia (2017); ** except China, India (2011), Brazil (2013), Iceland, Japan, South Africa, Switzerland (2015), Canada, Chile, Finland, Norway, South Korea, Sweden, UK, USA (2017), Indonesia (n/a)

Source: ILO, OECD, Credit Suisse

that they wish to continue working after reaching the normal retirement age – despite being given the possibility to reply “I don’t want to, but I (will) have to.”

2. The second group is comprised of countries like Japan or South Korea, where, despite universal pension coverage, many people above the normal retirement age continue working because they have to. These countries are often characterized by low pension replacement rates and above-average relative old-age poverty rates (Figure 4). According to our survey, the proportion of people above retirement age that have to continue working although they would rather not is well above 20% in Japan. In South Korea – the OECD country with the highest relative old-age income poverty rate – the answers show a similar pattern to the first group of countries, suggesting that stopping working at the normal retirement age is not even an option for a majority of the people there.

3. In countries from the third group, such as France or Germany, the three-stage lifecycle is still a common model. Working beyond the

normal retirement age is usually not necessary in these countries, as pension benefits mostly provide an adequate source of income for older people. Thus working into older age is mainly still optional for most people. However, with growing demographic and economic pressures on their pension systems, the need for longer working lives is growing in these countries as well, thus calling for appropriate policies aimed at encouraging longer working careers.

Going forward and for the purpose of simplicity, the study focuses on the set of countries in the second and the third group. The reason is that these countries have pension systems in place that allow (most of) their citizens to enjoy a period of retirement. Countries in these two groups are in advanced stages of population aging, therefore posing financial strain on their pension systems. The way these countries deal with aging societies, however, can contain valuable information for the first group of countries (see Chapter 1).

The challenge of prolonged working careers illustrated

In order to illustrate complex problems, it sometimes helps to use models that depict a simplified version of real life. In our context of aging societies, the model consists of the human lifespan of a middle-class worker whose life is divided into different stages. These life stages differ in number and with regard to their content and length across countries and individuals. There are two typical categories in terms of how these life stages are structured.

The first category consists of countries, where people pass – at best – two stages during their lifetime. The first stage consists of education, where children study as a preparation for working life. After finishing school, they enter working life and stay there until the day they die (Figure 5). Since many developing countries do not have (well-functioning) pension systems in place, the third stage for this category of countries has never been something people worry about because they rarely benefit from it. As mentioned previously, this category is not at the center of this analysis.

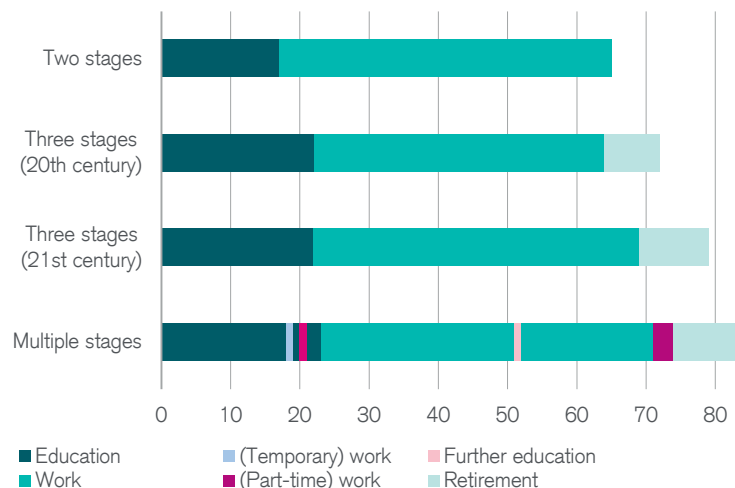
The second category consists of countries that moved away from the two-stage life at the turn of the 20th century. During this time, societies of (now) developed countries began rethinking the situation, which led to the birth of the pension system. In the light of their work-intensive lives, employees increasingly requested a reward for that burden. What they wanted was a short period of retirement and a government that provided for financial security during this stage (see Box on page 28). This resulted in the three-stage lifecycle consisting of education, working life and retirement. Since then, a typical three-stage path is as follows: after graduating from school, people work for several decades before they retire and enjoy their pension.

Owing to a significant rise in life expectancy in the past decades and the resulting financial pressure on pension systems, people in this second category see themselves confronted with a new reality. They can either choose to retire at the normal retirement age and risk financial bottlenecks in a prolonged retirement period or extend the second stage of working. With lifespans in developed countries often exceeding 80 years, most people will have to work longer.

Only people who have accumulated enough savings during their working lives or people who are willing to make substantial sacrifices with regard to their living standards during retirement can avoid this situation. For the rest, the three-stage lifecycle in the 21st century consists of

Figure 5: Reconsidering the traditional three-stage lifecycle of a middle-class worker

Schematic representation of three-stage and multiple-stage lifecycles with further education, part-time and temporary work, in years of life



* This figure is only a schematic representation. The lengths of each life stage can differ across individuals and countries along with the content.
Source: Credit Suisse

education, a prolonged working life and retirement.⁴ The idea of a prolonged working life, at first glance, may sound exhausting.

The lack in appeal of a longer working life arises because people simply imagine the future to be like the past and think that the structure of this prolonged working life will still follow the traditional three-stage life model. In their book, Gratton and Scott (2016) endorse a move away from the traditional model of three stages. Countries should think about alternative options that could make a prolonged working life much more attractive. In particular, countries should allow for a life in multiple stages in which people not only invest in tangible assets but also in intangible assets. Intangible assets include productive assets (knowledge, skills) and vitality assets (mental health, physical health, friendships, partnerships) and, just like other assets, they require care to not deteriorate. The multiple-stage model is an extension of the three-stage model and not a complete novelty for many developed countries. In fact, the transition to a multiple-stage model is already unfolding in many developed countries, with people increasingly looking for more flexibility with opportunities to retrain and work in non-standard working arrangements.

4. An equivalent extension of working lives cannot be assumed for people performing physically demanding work (e.g. construction work, mining), which cannot be easily performed at 70 years of age. Therefore, these people are less likely to postpone retirement and more likely to rely on financial support to cope with a prolonged retirement period. In the following pages, the focus lies on middle-class workers who should be the target of policies aimed at prolonging working careers.

Why are intangible assets gaining importance for a prolonged (working) life? First, in order to make longer working careers possible, old-age workers need to be in good physical and mental shape. Old-age workers in poor shape will be less able and likely to pursue longer working careers. Second, working for longer requires contemporary skills that are increasingly important in a fast-paced world with disruptive technologies.

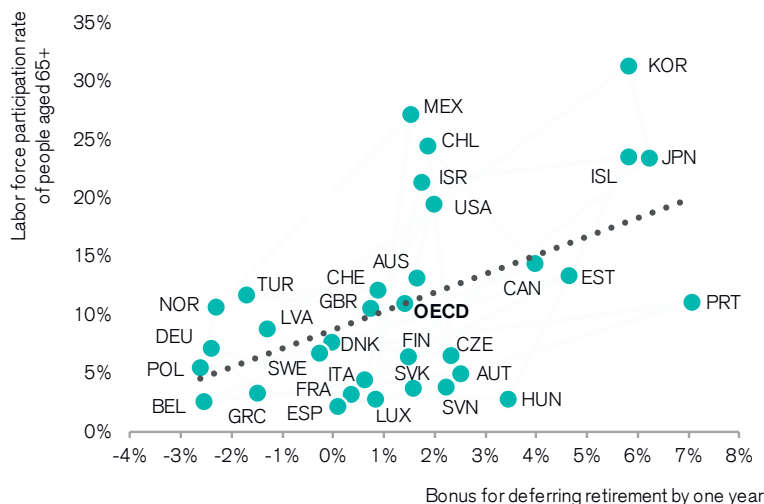
Table 1: Policy recommendations to strengthen longer working careers

Rewarding work and later retirement	<ol style="list-style-type: none"> 1. Increasing incentives for older workers to continue working 2. Decreasing incentives for older workers to retire early 3. Limiting the use of publicly funded early-retirement schemes, especially for old-age workers still in good shape 4. Discouraging mandatory retirement by employers
Encouraging employers to retain and hire old-age workers	<ol style="list-style-type: none"> 5. Tackling age discrimination in recruitment 6. Reducing labor costs and enhancing productivity of older workers 7. Eliminating special employment protection and unemployment benefit rules for older workers and setting wages based on productivity and competences rather than age 8. Implementing initiatives that provide guidance on work organization, training, health measures and working time policies to change capacities of old-age workers
Promoting the employability of workers	<ol style="list-style-type: none"> 9. Facilitating access to lifelong learning 10. Improving working conditions and job quality at all ages 11. Limiting the risk of long-term joblessness

Source: OECD

Figure 6: Rewarding deferred retirement pays off

Labor force participation rate of people aged 65+ (2018*); bonus for deferring retirement by one year (2016), OECD countries**, in %



* except South Korea (2015); ** AUS: Australia, AUT: Austria, BEL: Belgium, CAN: Canada, CHE: Switzerland, CHL: Chile, CZE: Czech Republic, DEU: Germany, DNK: Denmark, ESP: Spain, EST: Estonia, FIN: Finland, FRA: France, GBR: United Kingdom, GRC: Greece, HUN: Hungary, ISL: Iceland, ISR: Israel, ITA: Italy, JPN: Japan, KOR: South Korea, LUX: Luxembourg, LVA: Latvia, MEX: Mexico, NOR: Norway, POL: Poland, PRT: Portugal, SVK: Slovakia, SVN: Slovenia, SWE: Sweden, TUR: Turkey, USA: United States.

Source: OECD, ILO, Credit Suisse

Rewarding work and later retirement

Strengthening longer working careers is a complex endeavor that asks for a variety of approaches and solutions. In this regard, the OECD (2019a) recommends a large number of policies (Table 1). These policy recommendations aim at extending workers' careers and are based on reform experiences of countries that are dealing with an aging society.

Ideally, the pension system should be arranged in a way that people receive higher benefits if they work beyond the normal retirement age, creating an incentive to delay retirement. Conversely, when retiring before the normal retirement age, the pension benefits should be lower. This is what the OECD refers to as rewarding work and later retirement.

The OECD (2017) has designed a concept called "actuarial neutrality." According to this concept, an actuarially neutral pension scheme is a system where a worker is "financially neutral" from an actuarial perspective or indifferent between retiring or working an additional year as he/she approaches retirement age. Although costly for the pension provider, offering higher benefits than what is actuarially neutral for postponing retirement would provide a financial incentive to work longer. Conversely, offering a bonus below the amount that would imply actuarial neutrality would act as a disincentive to working longer. The factors taken into consideration for calculating the actuarially neutral bonuses are the retirement age, mortality rates, the discount rate and the indexation of pension in payments. Other parameters used to compute pension benefits are not considered. The figure is independent of what pension systems actually provide. On average across OECD countries, actuarial neutrality suggests a bonus of roughly 5.5% on past entitlements for postponing retirement by one year.

Plotting the bonus of deferring retirement by one year against the labor force participation rate of people aged 65+ shows that there is a positive correlation between the two variables. For each year of retirement postponement, Japan, for example, offers higher basic and earnings-related bonuses as well as extra contributions resulting in a total incentive of 11.3%. In other words, working one additional year on average leads to pensions increasing by 11.3%. Since a Japanese worker is actuarially neutral when a pension bonus of 5.1% is given, the effective bonus of one additional year of work compared to the outside option of retiring is 6.2% (Figure 6). At the same time, the labor force participation rate of Japanese workers aged 65+ was relatively high at 23.4% in 2018. In South Korea, postponing retirement by one year leads to pensions increasing by 11.0%.

Taking into consideration the actuarially neutral value (5.1%) gives a net bonus of approximately 5.8%. Similarly, the labor force participation rate for old-age workers in South Korea was at a relatively high level of 31.4%.

In many countries, workers do not have enough financial incentives to further postpone retirement once they are eligible for their full pension. For instance, there is no bonus for postponing retirement in Belgium and Germany because in both countries the total bonus of deferring retirement by one year is below the actuarial neutral value, resulting in a disincentive to postpone retirement. In 2018, Belgium had one of the lowest labor force participation rates among people aged 65+ at roughly 2.6%, with only Spain (2.1%) having a lower rate. In Germany, only 7.2% of old-age workers (65+) still worked in 2018.

Rewarding work and deferred retirement is one way to incentivize longer working careers. However, solely extending working careers through financial incentives is short-sighted. In order to make this a relevant discussion, old-age working first needs to be a realistic option. This means that old-age workers need to have the skills and good health to allow them to work longer. These two factors can therefore be regarded as necessary conditions for longer working lives.

Importance of further education, partnerships and good health

Today, one key difference to working in the 20th century is the rising importance of further education. Many prolonged career paths require an investment in personal skills and knowledge at some point because, over a longer working career, the employment landscape is more likely to undergo dramatic changes. This also means that skills acquired during the first stage of education can potentially be outdated in the later stages of working life.

If needed, a multi-stage lifecycle would allow workers to undertake investments in productive assets. These investments should prevent the skills of employees (particularly old-age workers) from deteriorating during the second stage of continuous work. If skills are outdated and further education is neglected, the employees affected could lose their appeal on the labor market and discourage employers from retaining them. Therefore, a short break to engage in further education can boost and more importantly extend the working careers of employees. While a short absence in the labor market leads to short-term losses in contributions to pension funds, not investing at all can lead to patchy working careers in the long run and lower total pension contributions.

Another aspect is the growing importance of investing in vitality assets. This group of intangible assets comprises all those assets related to an individual's relationships and health. First, life is more enjoyable if you are surrounded by a supportive family and caring friends; neglecting them during a prolonged working life can adversely affect relationships such that these assets either deteriorate or disappear completely. Second, good health in old age is of great importance. The gift of longevity only unfolds if these additional years on earth are spent in good physical and mental health.

But good health – just like good relationships – cannot be taken for granted. Instead, both need investments. Some workers can arrange for a longer working life with enough time spent on strengthening relationships and living a healthy lifestyle. However, others have a hard time reconciling the two. For the latter group of workers, a multi-stage lifecycle would allow them to spend more time with family and friends, while at the same time exercising and doing sports. For instance, workers could consider part-time employment to invest in tangible assets and simultaneously build up meaningful relationships and better health. The benefits would be healthier workers who are productive for longer, thus allowing longer working careers.

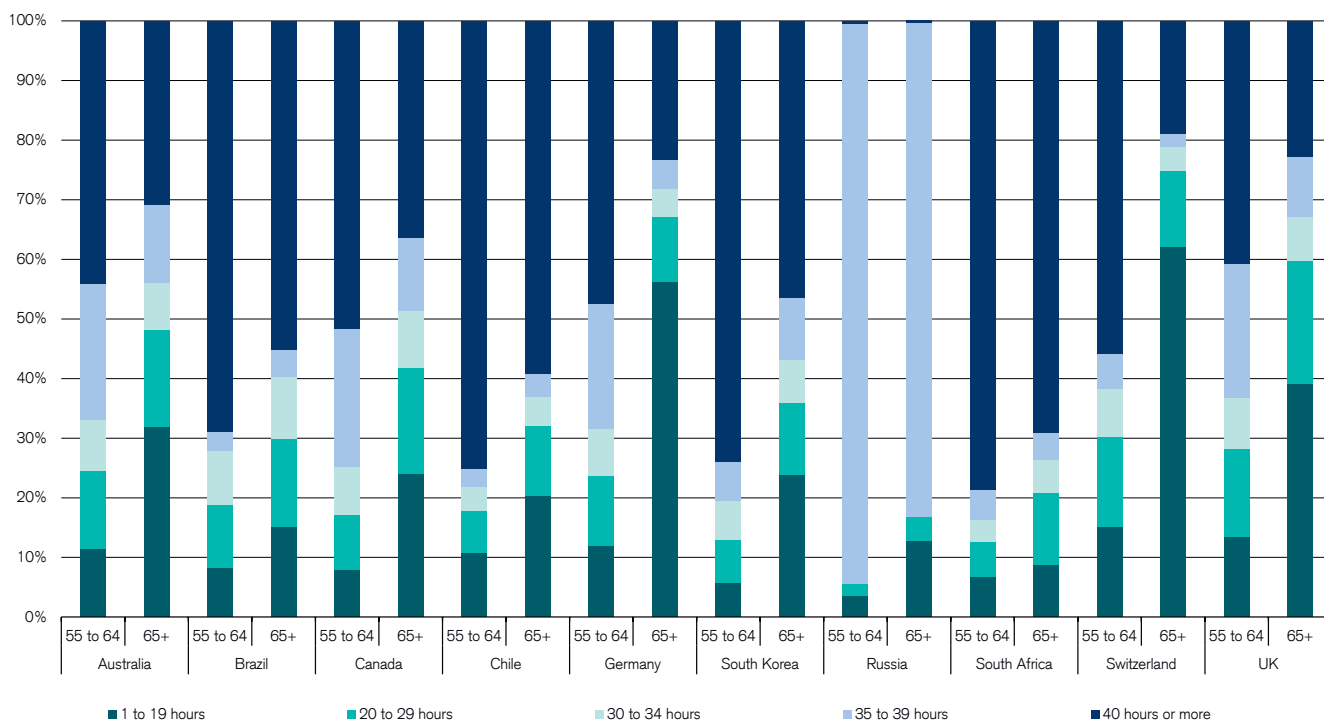
In sum, reducing working time or taking a short-term break during a prolonged working career can be an opportunity to invest in intangible assets such as knowledge, relationships and good health. With updated skill sets, better physical and mental health, workers can enhance their employability and, at the same time, encourage employers to retain or hire them as old-age workers (**Table 1**). Allowing for a multi-stage lifecycle with breaks to invest in intangible assets is thus in line with several of the OECD's policy recommendations.

Increasing share of old-age employees working part-time or on a temporary basis

Evidence suggests that workers often reduce weekly working hours when retiring (**Figure 7**). In all countries investigated, workers aged 55 to 64 had longer working hours than workers older than 65. A reduction in working hours can have different causes. One possible cause is that old-age workers become too expensive over time for companies and are therefore forced to reduce their working hours. Another might be the lack of financial incentives to work beyond the normal retirement age. Yet another could be the employees' decision to achieve more flexibility, meaning that old-age workers voluntarily decrease working hours in search of a better work-life balance.

Figure 7: Weekly hours worked decrease with old age

Distribution of the working population by weekly hours worked and age group, selected countries, 2018



Source: OECD, Credit Suisse

The increasing demand for a better work-life balance has given rise to non-standard working models in recent years. Non-standard work models such as part-time work, temporary work, teleworking or freelance working have gained in importance. Some (soon-to-become) retirees may find ways to reconcile these non-standard working arrangements with a long-delayed hobby or to perform gratuitous services to society sharing their expertise with others (see Box on page 54). The spread of the internet and the emergence of new information and communication channels have boosted the flexibility of work arrangements even further as these technologies make it possible to provide services independent of location and time.

A widespread form of non-standard work is part-time work. According to the OECD, a person is generally considered to be in part-time employment if weekly hours worked do not exceed the threshold of 30 hours. In 2018, roughly 33.2% of male and 49.5% of female employees aged 65+ in OECD countries worked part-time. This form of work is becoming more and more widespread within the older age groups, although there are still country- and gender-specific differences. To illustrate this point, we focus on four countries. Switzerland and Germany represent countries whose populations mostly leave the workforce around the normal retirement age, while Japan and South Korea represent countries whose populations are increasingly forced to work longer.

In Switzerland and Germany, the share of men working part-time increased in most age groups, with the upward trend being particularly strong for employees older than 65 years (**Figure 8**). At the same time, the already high proportion of women working part-time at age 65+ has remained relatively constant. If workers in Germany and Switzerland work beyond the normal retirement age, they increasingly look for more flexibility in the form of part-time work. In Japan and South Korea, the proportion of women working part-time has increased significantly across all age groups – particularly female workers aged 65 years and above (**Figure 9**). In Japan, the share of female part-time workers (65+) increased from 45.1% in 2002 to 59.2% in 2018, and, in South Korea, the share rose from 25.6% to 46.3%.

For male workers in Japan and South Korea, the share of part-time workers also increased slightly for the oldest age group. However, the increase was much smaller for men than for women. Even though part-time employment increased more significantly in Japan and South Korea, the level of part-time employment in the two countries in 2018 was still below that of Switzerland and Germany. Since people in Japan and South Korea are increasingly forced to work for longer, a possible reason for the lower proportion of men working part-time could be the need to generate higher earnings.

Figure 8: Part-time work popular among older workers in Europe

Share of part-time workers in total employment aged 20–65+ by age and gender, 2002–2018

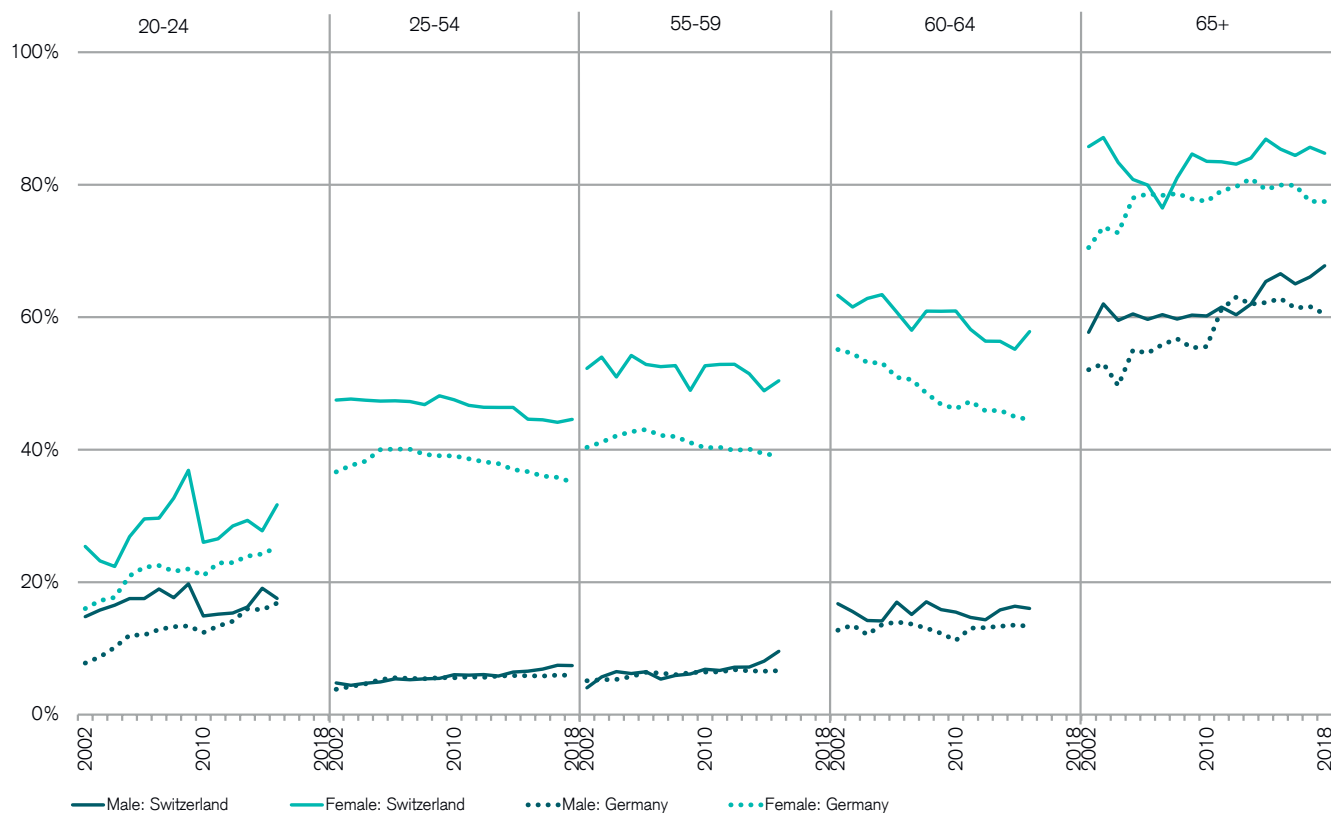
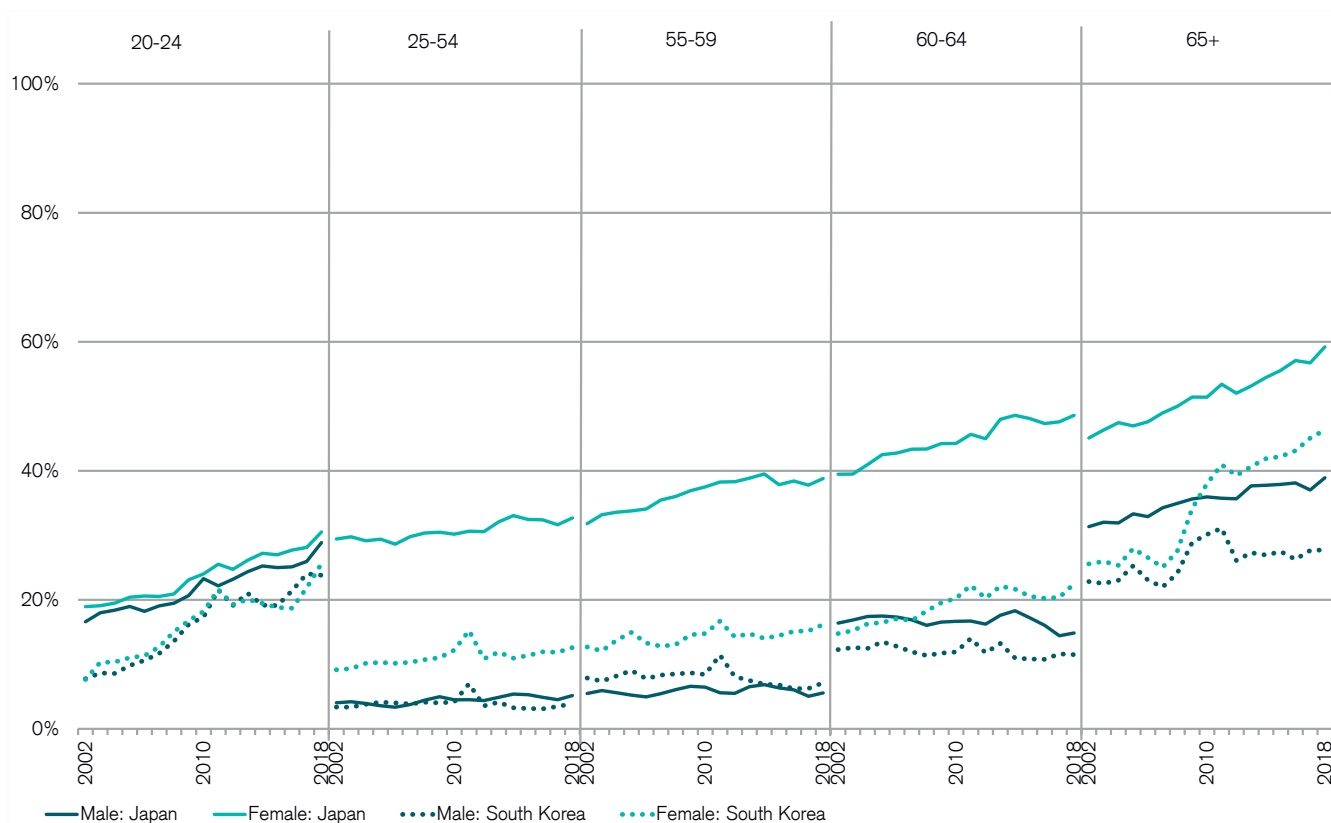


Figure 9: Upward trend of part-time work for women in Asia

Share of part-time workers in total employment aged 20–65+ by age and gender, 2002–2018



Source Figures 8 and 9: OECD, Credit Suisse

Figure 10: Old-age workers rarely do temporary work in Germany

Share of temporary workers in total dependent employment by age, Switzerland and Germany, 1998–2018

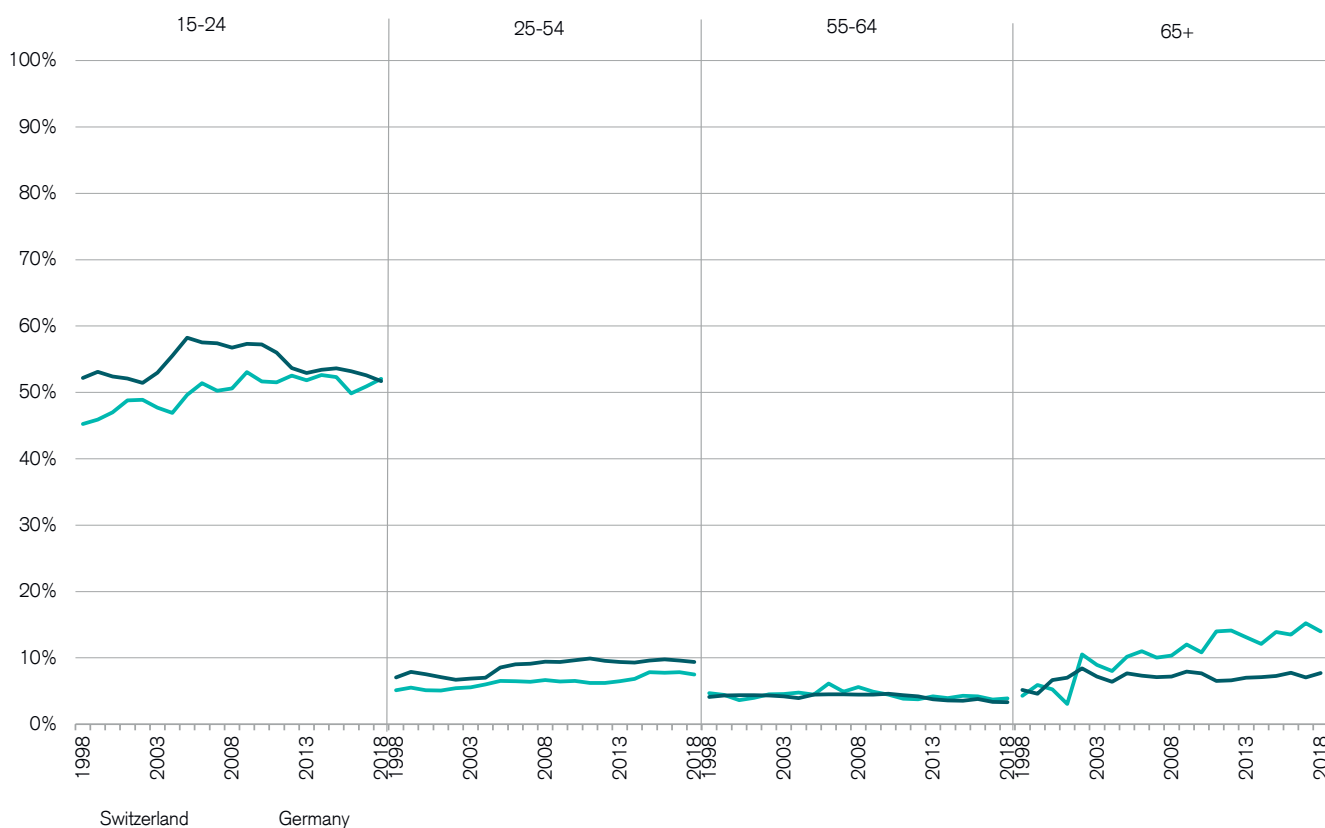
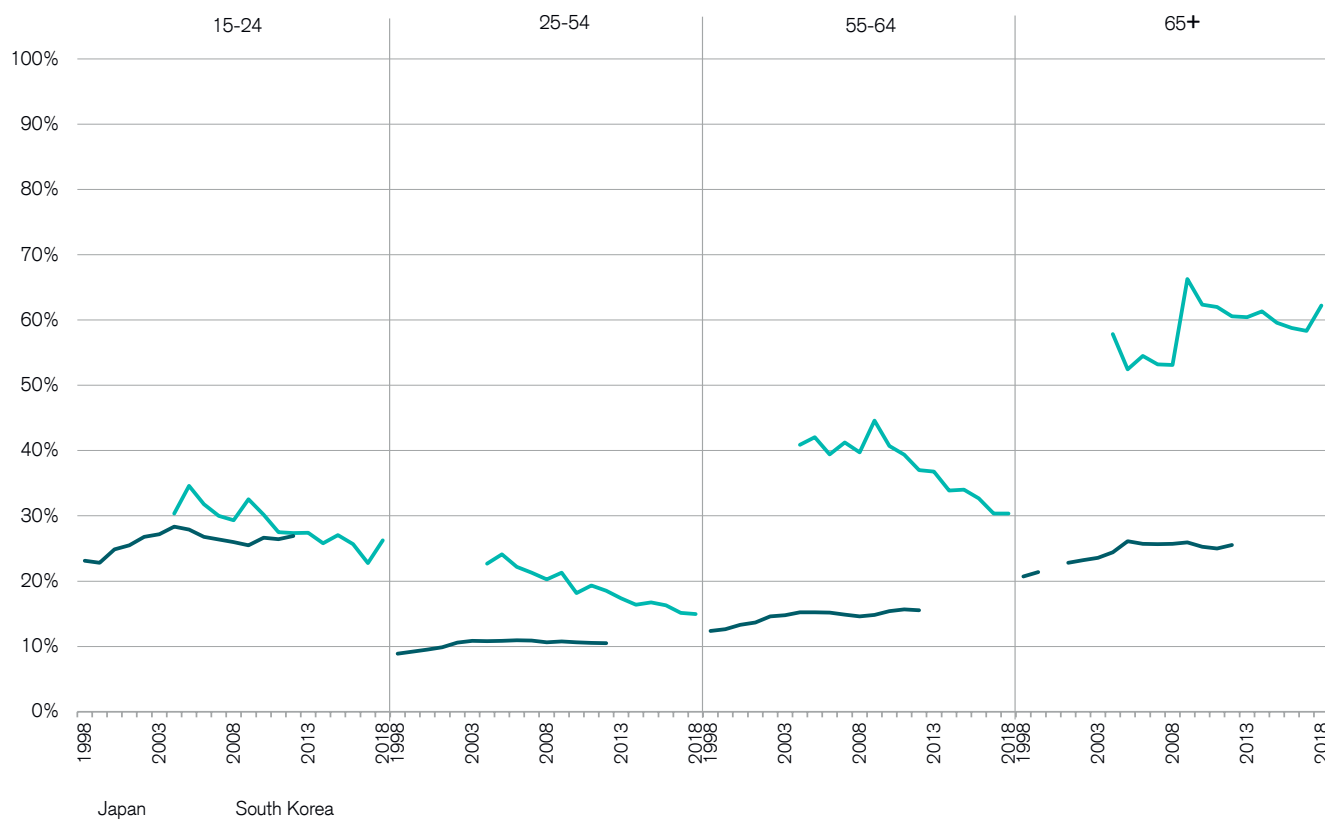


Figure 11: Old-age workers in South Korea often seek temporary work

Share of temporary workers in total dependent employment by age, Japan and South Korea, 1998–2018



Source Figures 10 and 11: OECD, Credit Suisse

Fixed-term employment contracts are another type of flexible working model: jobs for specific projects, internships or maternity replacements are forms of fixed-term employment contracts. In 2018, for instance, the share of temporary workers aged 65+ measured as a percentage of total dependent employment across OECD countries was 16.4%. On a country level, there are notable differences with regard to temporary employment: in South Korea (62.2%), the share of temporary workers in 2018 was much higher than in Switzerland (14.0%) or Germany (7.7%) for the oldest age group (**Figures 10 and 11**). Moreover, the share of temporary workers in Switzerland and Germany does not increase substantially by the time normal retirement age is reached. In South Korea, however, the share of temporary employment more than doubles from 30.4% in the 55–64 age group to 62.2% in the 65+ age group. Despite these differences, there is a slight upward trend in all four countries, indicating a higher importance of temporary employment for old-age workers.

A common feature of these jobs is that employment contracts are concluded from the outset for a certain period of time. From the employer's point of view, this form of work enables a reduction in personnel costs by supplementing a lean workforce with temporary staff only when necessary. In some cases, fixed-term contracts are converted into regular contracts based on aptitude. At the same time, temporary work offers employees the opportunity to combine various activities. In addition, there is a need for flexibility and variety, especially among young employees who do not yet want to consolidate their careers.

Allowing for more flexible work arrangements also improves working conditions for old-age workers as they can opt for a model that better suits their specific needs. At the same time, it improves employability and encourages employers to retain or hire old-age workers (**Table 1**) because if they are physically and mentally fit, they are more likely to be productive. Hence, allowing for more flexibility through non-standard working agreements in the framework of a multi-stage lifecycle is also in line with the policy recommendation of the OECD.

A multi-stage lifecycle offers opportunities, but also risks

While non-standard work arrangements such as part-time employment or temporary employment can help to lengthen working careers, they are often also one reason for lower income. For instance, temporary workers change jobs more frequently and/or work fewer hours than in traditional employment contracts (OECD, 2019b). As a consequence of these patchy working careers,

they have lower occupational pension coverage. Owing to these frequent job changes, temporary workers also have a relatively short employment tenure, resulting in shorter unemployment benefit durations or restricted access to unemployment benefits. In sum, frequent job changes lead to lower pension entitlements. Another important point is that temporary workers have fewer opportunities for further education and fewer career options compared to workers with permanent positions in companies. Further education is particularly important in an extended working life, where skills need to adapt to a fast-changing business environment.

To conclude, non-standard work arrangements offer possibilities to prolong working careers, while at the same time posing a risk if workers rely on them excessively in a multi-stage lifecycle or if they are insufficiently covered by pension schemes. The difficulty here is to design pension systems in a way that suits the needs of an increasingly heterogeneous group of workers.

Voluntary work in old age

Once people enter retirement, they have the possibility to take up tasks that they barely had time for during their working lives. Many retirees use this newfound time to finally pursue a long-loved hobby, while others engage in volunteering activities. Such work has become an important aspect of many seniors' lives. In Switzerland, for instance, 53.2% of 65–74-year-olds did voluntary work in 2016 – up from 37.8% in 2010. This age group has the highest participation rate in voluntary work of all age groups. Volunteering can either take the form of formal voluntary work, such as activities in sports and cultural associations, or informal voluntary work, which includes tasks such as looking after relatives' children.

Using the knowledge and manpower of active retirees brings substantial benefits, and entrepreneurs have come to recognize this. For instance, they have established websites where people can “hire” retirees for a diverse range of daily tasks ranging from, for example, life coaching to installing electric appliances. This may even allow retirees to make money pursuing lifelong hobbies, e.g. as tour guides in the mountains. On the one hand, such work reactivates unused human capital and, on the other, it creates added value for retirees who desire to remain active as they grow older. Usually, retirees receive a low hourly wage in return for their services. In view of the financial challenges pension funds face, retirees may increasingly be tempted or indeed forced to substitute unpaid services for paid activities.

Work and pensions in the 21st century

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Work and pensions have always been intrinsically linked. Before the industrial revolution, work was the only source of old-age provision beside the family; it still is in many informal sectors around the world. Strong formal links between employment and pension income have been the backbone of social security schemes in recent decades. Tellingly, occupational pensions have even preceded public social security systems. Motives to provide such plans range from paternalistic to more selfish reasons, such as retaining good workers.

The financial crisis, lower real interest rates and demographic change have taken their toll on the financial viability of social security schemes and weakened the link between employment and retirement income. Firms are shedding their pension plans, often for regulatory reasons as accounting rules impose an unpredictable burden on the balance sheet of the company. There are other reasons that make it more difficult for employers to organize old-age provisions: shorter tenures, international migration, incompatibilities of pension plans across borders, and last but not least, the “uberization” of the workforce.

The question is what to do: should work and pensions be decoupled, or should we be reconsidering the link between work and pensions and put it on more solid ground?

One way to cut the link would be a universal basic income, an idea that has become quite popular in recent years. However, most economists consider it too costly, not really addressing the problem of inadequate income, and harming incentives to work and save.

Moreover, the recent developments hide the fact that strong links between work and pensions still exist. The bulk of an average individual’s income – and thus the obvious source for not only pension savings, but also to finance redistributive policies – remains labor.

But how to reconsider the link? Putting the responsibility in the hands of employers will not work anymore in a much more decentralized work environment. We need the state as a sponsor, not only as a co-financer (a role which is here to stay), but more importantly as a co-organizer. We need a system that:

1. Provides a basic income level and prevents poverty in old age,
2. Strengthens incentives to work and save,
3. Allows for a changing work environment with more self-employment and intermittent work breaks,
4. Includes care work as a contributor,
5. Takes care of heterogeneity in terms of earnings ability and preferences.

In short, we need a flexible scheme that sets the incentives right without jeopardizing the protection of the needy – and the other way around.

So here is an idea how to proceed: income protection during working periods could be combined with a private savings pillar that goes beyond occupational pensions and offers a partially (self-)funded income replacement scheme during a person’s entire life. In a universal contributory scheme, contributions should be levied on all income, without any distinction between self-employment and contractual employment, taking into account care work, especially for elderly citizens.

The contributions could be split between the individual accounts of the contributors and a public solidarity fund (which can also be alimented out of general tax revenues). Those without a job (either because of unemployment or a voluntary break) first draw on their individual savings and then, upon depletion, from the solidarity fund.

The same logic would also apply to later stages in life. Any money left in the individual account can be used to finance a top-up on the basic retirement income that is paid out of a public

scheme. As both the solidarity fund and the individual savings account provide a basic level of income even for those with lower income opportunities and care work, the pension scheme can be financed parsimoniously from a later age onward (it should also be indexed to life expectancy).

Sounds utopian? Not quite, there are a number of existing policies that include aspects of the proposed scheme. Singapore has financed its social protection scheme out of individual

accounts for decades. On a smaller scale, Chile introduced a similar system to provide for spells of unemployment and a possibility to top up pension income with left-over funds in 2002. Both have their drawbacks, the Singaporean scheme is overloaded with healthcare and housing expenditures, the Chilean system is too low for low incomes. But both demonstrate that a work-pension link over the lifecycle is not impossible.



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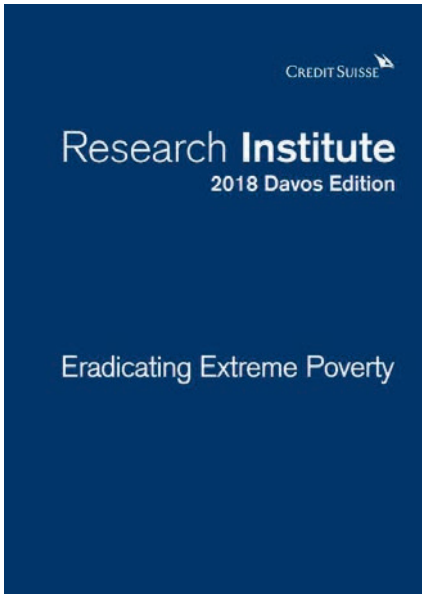
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