NATIXIS INVESTMENT MANAGERS

2023 NATIXIS GLOBAL RETIREMENT INDEX

Good News. Bad News.

Retirement security improves but few feel more secure.

Contents

For the first time in a decade, the data presents reasons for renewed optimism about retirement security. The pandemic is fading in the rearview mirror, inflation is easing in North America and Europe, central bank moves have boosted interest rates, unemployment in key markets is at or near historic lows, and nearly all of the developed countries included in the Natixis Global Retirement Index received a higher overall score for 2023.

But while improvements in the areas of finances in retirement, material wellbeing, health, and quality of life suggest that retirement security feels more attainable at the macro level, individuals in many countries are not as optimistic according to results of the 2023 Natixis Global Survey of Individual Investors.

In fact, even with inflation declining to as low as 3% in the US and 5.5% in Europe,[1] more than four out of ten working individuals (42%) say inflation is killing their dreams of retirement. More specifically, 68% of investors in this group of 7,552 individuals in 23 countries say recent inflation has significantly hurt their ability to save for retirement.

THE GOOD AND BAD NEWS ON RETIREMENT

More than half of individuals think they will have financial freedom in retirement.
But 44% have concerns for their outlook on retirement.

56%	I'll have the freedom to do what I want when I want	21%	I'll be forced to move somewhere less expensive
28%	I'll have no choice but to live frugally	12%	I'll have to rely on friends & family to make ends meet
21%	I'll be stuck having to work	10%	I'll have to sell my home

42%

of working individuals say inflation is killing their dreams of retirement

Saving was already a challenge. And now, as they ponder the prospects of higher prices, longer lives and the potential for reduced retirement benefits, many individuals doubt whether they will be able to put the pieces together at all. Overall, 48% of this group of affluent investors ($100,000+ in investable assets) worry that retirement won't even be an option, including 38% of those with $1 million or more in assets.

So, even as the broad measures have improved, it's clear that individuals are faced with critical challenges, including five key risks that will impact their retirement security in 2023 and well beyond:

- **Inflation:** Even as it recedes in the short term, individuals have learned hard lessons about just how fast and how high prices can rise. In the long term they will need to reassess savings and investment goals to ensure they are better positioned for any future spikes that could kill their chances at a secure retirement.
- **Interest rates:** A decade of record low interest rates had hampered retirees' ability to generate income. Now with rates rising, both those in retirement and those who aren't need to better understand the ripple effects of a rising rate environment on their financial picture. Most individuals don't.
- **Public debt:** The Global Financial Crisis added $12 trillion to public debt in OECD countries,[2] then the Global Pandemic added $18 trillion more.[3] In the end, somebody has to pay the bill and it could impact retirement income plans of individuals across the globe.
- **Demographics:** An already aging global population is experiencing the effect of a "Silver Tsunami" as a larger and even older population is pressuring traditional notions of retirement. The results are already visible as the transition from defined benefit to defined contribution escalates and policymakers grapple with the best way to manage increased demand for support from an aging population.
- **Big expectations and bad assumptions:** When it comes down to it, the only factor individuals can actually control is their expectations. But whether they are retired or not, investors need to ensure their assumptions about retirement are accurate and their financial expectations are realistic.

The results of the 2023 Global Retirement Index do show glimmers of hope for global retirement security. But not every individual sees the light. Many have looked at the mounting financial, societal, and personal challenges and have simply lost hope.

In fact, 48% of working individuals included in the survey think the problems are insurmountable and say "it's going to take a miracle to be able to retire securely" – an increase over the 40% who said the same in 2021. Half of those surveyed say they are so concerned that they avoid thinking about retirement altogether. That may be the biggest mistake they can make.

The best way to overcome these big challenges, though, is to face them head on. Understand what they mean for society and individuals. And set a realistic course forward. That begins with addressing the risk that has been most present in recent years – inflation.

Inflation:

A light at the end of the tunnel? Or an oncoming train?

Inflation has long been the wild card in retirement plans and policies. No matter how well the financial strategy for retirement security has been mapped out at the personal or societal level, rising prices have always been an unpredictable variable that could swiftly upset even the best laid plans.

Economists, retirement planners, and others have long used inflation at 2%–4% annually as a rule of thumb. Over time, most individuals were likely to accept this estimation because it was their experience. That is, until the 15 years following the Global Financial Crisis. During this period, in which monetary and interest rate policy deployed by central banks to manage the economy helped to keep inflation well below traditional averages, many had forgotten just how much a sudden increase in prices could upset their plans.

2020–2023 IS A WAKE-UP CALL ON INFLATION

Inflation Rate	US	UK	Japan	Germany	Euro
2020–2023	4.7%	4.9%	1.1%	4.1%	4.2%
2010–2020	1.7%	2.1%	0.4%	1.3%	1.3%
1980–2010	3.6%	3.9%	1.1%	1.5%	1.9%

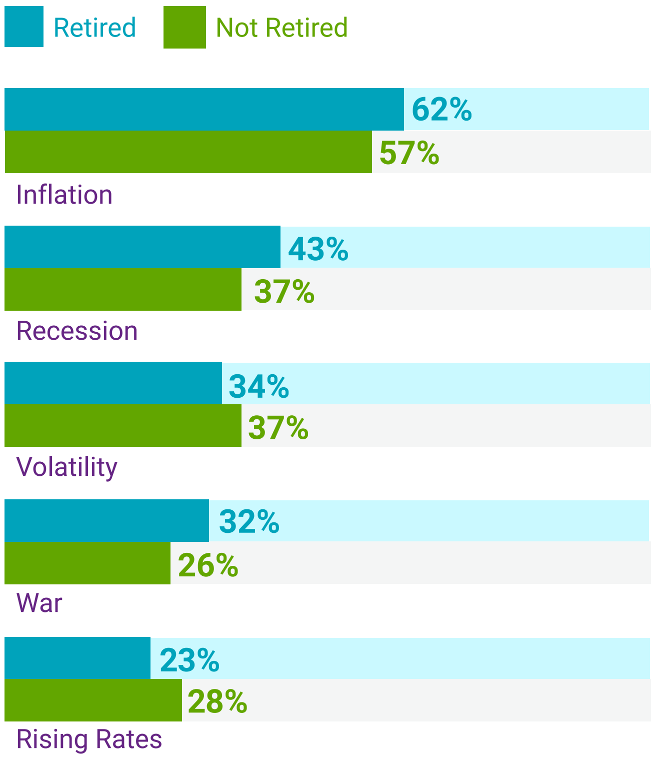
Source: Bloomberg

In the three years following the global pandemic, the world has become all too familiar with the impact of inflation. After experiencing big spikes in the cost of everything from oil to groceries to used cars, 83% of working investors said recent history shows just how big a threat inflation is to their retirement security – a sentiment echoed by 80% of the 998 respondents who have already retired.

Overall, inflation ranks as the number-one investment concern for both retirees (62%) and workers (57%). Similarly, rising everyday prices also come in as the number-one financial fear for both groups (60% of workers and 73% of retirees). The sting is so strong that inflation now comes well ahead of the fears that usually top their list, including taxes and sudden unexpected large expenses – like worries about losing a furnace in the dead of winter or discovering a failed roof in the middle of a storm.

But between the two groups, retirees face a bigger risk from inflation, considering that many are living on a fixed income and the effect of reduced purchasing power may be amplified as large heating bills and bigger grocery expenses eat into their accumulated assets.

TOP INVESTMENT CONCERNS



Prices ease but concerns remain high

Retirees in some countries have been able to breathe a sigh of relief in recent months as central bank efforts to bring inflation under control have yielded the desired results. In June, inflation in the US had been cut by more than half from 6.5% six months earlier to just 3% in 2023. The ECB delivered comparable results, taking inflation from 2022's 9.2% to just 5.5%. But not all efforts have been as successful. For example, inflation in the UK has moderated by less than 3% in the same timeframe. Though 7.9% may sound better than the 10.5% rate experienced a year earlier, it may not feel any better in consumers' wallets.[4]

In contrast, the economic bounce from China's much delayed reopening has fizzled, and in July the country entered deflationary territory as prices dropped 0.3%[5] year over year, a phenomenon driven largely by lower costs for food and transportation. The challenge in this scenario is that consumers may see prices dropping and postpone purchases, waiting to see how low prices will drop before buying. With demand decreasing, unemployment has increased in certain sectors. In June unemployment of those aged 16–21 had climbed to 21%.[6]

Lessons learned about retirement saving

Despite the improvements in the West, individuals are still concerned about the impact of inflation on their plans for retirement. More than three-quarters of workers (77%) say this recent spike in inflation has shown them why they need to save more for their retirement – a sentiment echoed by 66% of those who are already retired. More than six in ten (63%) workers say it also shows why they should invest more for retirement (as do 41% of retirees).

They are right to keep inflation top of mind. A recent survey of market strategists in the Natixis Investment Managers family showed that 69% rank inflation as a moderate (47%) or high (22%) risk over the next six months. Even with recent improvements in mind, central banks have not yet met their target rate of 2%, something this pool of highly experienced investment professionals say may not happen until the second half of 2024 (28%) or as late as 2025 (38%).[7]

Individuals are well aware of the risks, and 68% of investors worldwide say this painful bout of inflation has highlighted the importance of professional advice. It's also clear that many may need advice as they face another unfamiliar economic scenario, the rising rate environment.

INVESTORS' BIGGEST FINANCIAL FEARS IN 2023

	Higher everyday costs	Large, unexpected expense	Taxes	Healthcare costs	Job security	Cashflow
Retired	73%	43%	32%	34%	5%	15%
Not Retired	60%	44%	36%	27%	26%	25%

Rising interest rates:

A win many individuals don’t understand

Low interest rates have been a distinguishing economic factor in the 21st century – so far. Over the past 20+ years, central bankers have had to rely on rate cuts to stave off potential market and economic collapse brought on by three successive crises including the 2001 Tech Bubble, the 2008 Global Financial Crisis, and the 2020 Global Pandemic.

In fact, not once in the past two decades have rates on 10-year Treasuries surpassed January 2000’s 6.7%. In Europe, rates have also been on the decline since January 2000’s 5.5%.[8] And while this extended run of low rates had created favorable conditions for borrowers, businesses, and investors, low interest rates have wreaked havoc on retirement security.

CENTRAL BANKS HAVE REVERSED 15 YEARS OF LOW RATES

	US	UK	Germany	Euro	Australia
7/31/2023	3.96%	4.31%	2.49%	2.49%	4.06%
7/31/2020	0.53%	0.10%	-0.52%	-0.52%	0.82%
12/31/2008	2.21%	3.02%	2.95%	2.95%	3.99%
1/31/2000	6.67%	5.74%	5.54%	5.54%	7.23%

Source: Bloomberg

From the individual perspective, low rates made it hard to annuitize a sustainable retirement income stream from lifetime savings. It also increased investment risk by limiting bonds’ ability to provide ballast in portfolios. For pension managers, it led to increased liabilities and decreased funding ratios, making their ability to ensure benefits to members uncertain over the long term.

So, if there is a silver lining in the inflation picture, it is the series of rate hikes that central bankers have implemented to counter rapidly rising prices. Since March of 2022, central banks in many regions have been on a run of interest rate hikes that have delivered the highest interest rates in 15 years or more. In the US, the Fed has implemented 11 hikes in 16 months, taking its target rate from 0.25% to 5.50%. Similarly, the ECB has implemented 9 hikes in the same timeframe, taking rates there from -0.50% to 3.75%.[9] Others have followed suit.

Higher interest rates. Lower pension liabilities.

In the long term, higher interest rates will help pensions address the critical shortfall in funding ratios, but not without some short-term pain. Since bankers began the cycle of rate hikes, pensions have taken a hit on asset values. According to OECD, the value of the $48 trillion in pension assets held in its 38 member countries declined by -15.6% in 2022.[10] OECD reports that the losses were due in large part to the large volume of fixed income instruments held by pensions along with losses in equity markets and inflation.

But pensions may find that the long-term benefits of higher interest rates outweigh short-term losses. In essence, higher rates have helped to improve funded ratios, or the ratio of assets to liabilities, from two different angles. First, higher market yields mean a higher discount rate may be applied to future liabilities, lowering their present value; and second, return estimates are likely higher as pensions can now invest in bonds that are now paying significantly higher yields than what we’ve seen over the past decade. It’s these assumptions that determine if they will have the cash available to pay out all that is owed to members.

Individuals will also find some bad in rising rates. Most notably, rising rates mean higher borrowing costs, especially on big ticket items like homes and automobiles, though that drag has yet to be felt in housing markets. It can also mean that their savings take a short-term hit as they did in 2022, when for the first time in 45 years stocks and bonds had losing years. But retirees should be particularly happy with higher rates, as higher rates mean more favorable conditions for generating income off their savings.

WHERE THE LARGEST PENSION LOSSES OCCURRED IN 2022

-20.7%	NETHERLANDS
-20.2%	UNITED KINGDOM
-17.2%	LUXEMBOURG
-16.5%	POLAND
-15.0%	UNITED STATES

(OECD MEMBERS) [10]

What do rising rates mean for bond portfolios?

Unfortunately, few understand what rising rates mean for their investments. The 2023 edition of the Natixis Global Survey of Individual Investors set out to test bond knowledge among 8,550 affluent investors in 23 countries. The survey presented them with a simple quiz asking them to identify what happens to a bond portfolio when interest rates rise.

Respondents were given five choices and asked to choose all that apply:

a) The price of the bonds increases.
b) The price of the bonds decreases.
c)The income currently received from the bonds increases.
d) The future income from bonds increases.
e) I don't know.

There are two correct choices in this example: (b) The price of bonds in the portfolio decreases, because you can now buy bonds at a higher interest rate; (d) Future income from bonds increases, as fixed-income allocations can now be invested at a higher rate.

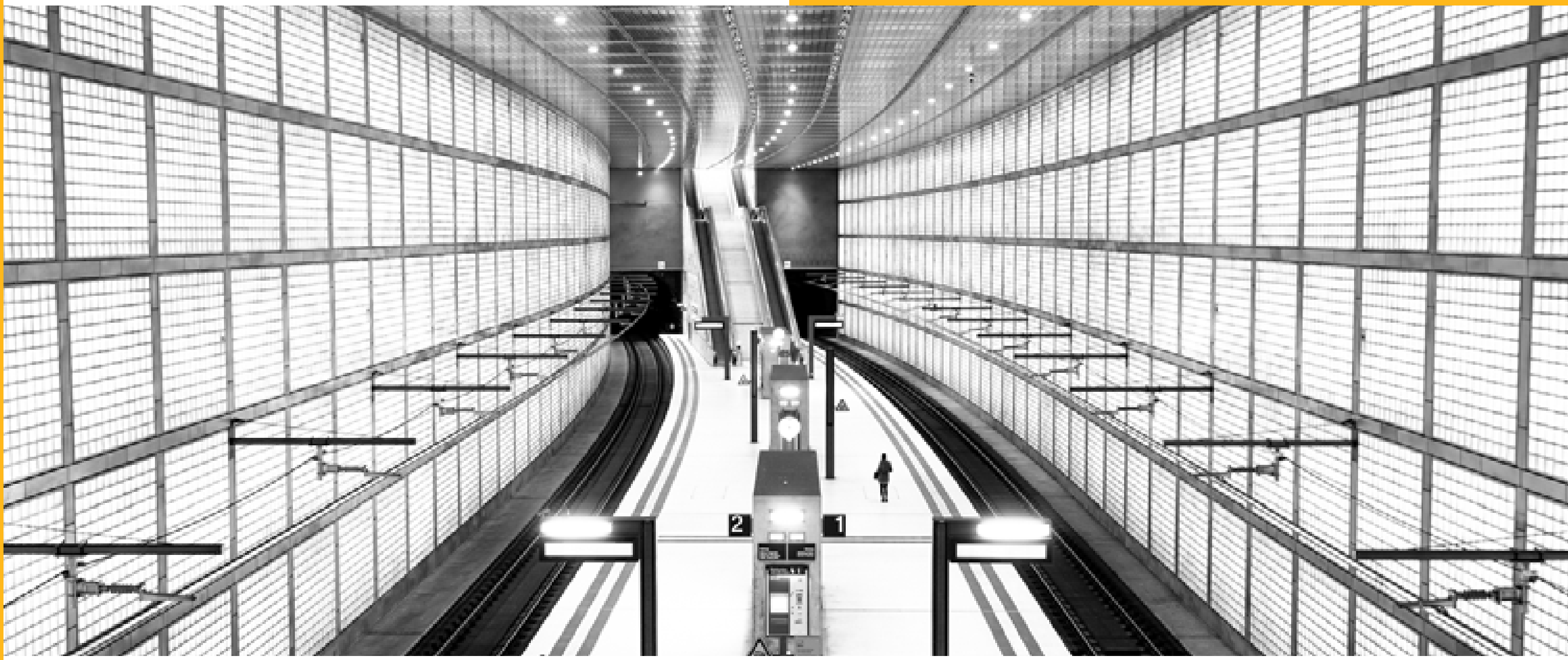
Only 2% of investors overall knew both correct answers. For partial credit, 27% knew prices would decrease. Only 15% recognized that future income potential would increase. Worse yet, while only 2% of retirees knew both answers, only 12% knew about the higher income potential. At a time when they should be concerned with wringing as much income out of their investments as possible, 48% of retirees simply answered, "I don't know."

This lack of knowledge may be one of the key reasons that despite the highest rates in 15 years, only 22% of retirees report that rising rates have led them to add bonds to their portfolios. There will be a lot riding on this lesson for future retirees as they contemplate the potential for lower public retirement benefit payments as a result of growing public debt.

BONDS ARE MATH. MATH IS HARD.

	Passed the quiz	"I don't know"
Taiwan	5%	18%
Hong Kong	4%	8%
Mexico	3%	21%
China	3%	6%
Japan	3%	33%
Germany	3%	31%
US	3%	37%
Canada	2%	51%
France	2%	40%
Singapore	2%	22%
Argentina/Uruguay	2%	28%
Spain	2%	28%
Switzerland	2%	24%
Thailand	2%	12%
Korea	2%	17%
Colombia/Peru	1%	28%
UK	1%	54%
Chile	1%	31%
Italy	1%	35%

At a time when they should be concerned with wringing as much income out of their investments as possible, 48% of retirees simply answered, "I don't know."



Public debt:

Somebody will eventually have to pick up the tab

Another outfall of managing economies through three different crises in 20 years is that policy makers have had to issue substantial levels of public debt to fund recovery programs. In fact, public debt, as measured as a percentage of GDP, has been growing consistently across OECD countries since the turn of the century.

Over the past 20+ years, public debt levels across the developed world have been accelerating. Consider this: In 2010, OECD reported the average debt to GDP ratio of its 38 member countries stood at 69.2%. Even as the financial crisis eased in many regions, many countries struggled with sovereign debt crises like those seen in Greece, Italy, Spain, and Portugal. By 2019, the average debt to GDP ratio among OECD countries had reached 78.6%. Then came Covid and the average ratio increased by almost 20% to 93.3% during the pandemic.

While that was the average, some countries saw even greater increases. In Canada, the debt to GDP ratio jumped 31% from 111.9% to 146.1%. In the UK, it jumped 27% from 118.8% to 151.2%. For some it added to an already large bill as Japan saw its debt climb from 234.8% to 257% of GDP and Greece saw it grow from 200.8% to 236.8%.

A momentary lapse in debt pressure

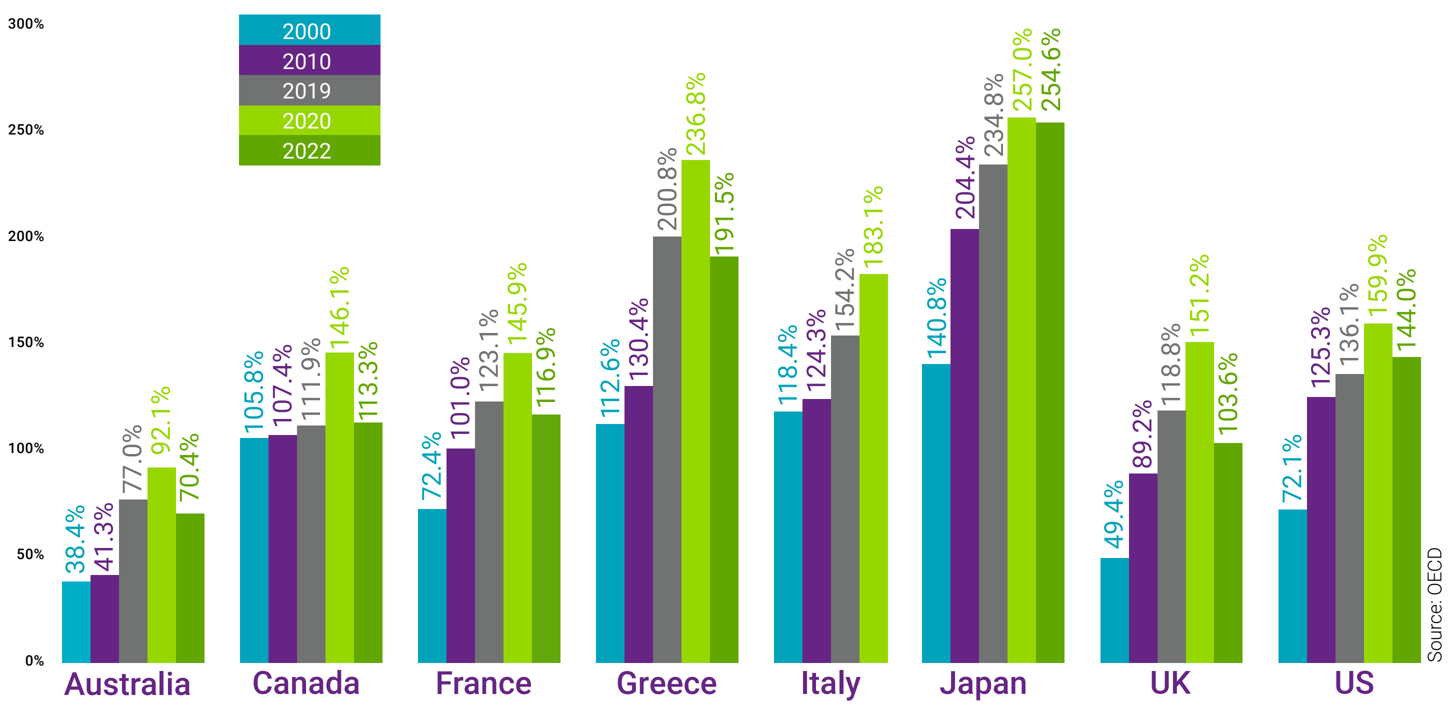
Interestingly enough, the same inflation spike that hurt consumers actually helped alleviate public debt concerns in the short term. The unique combination of higher prices, higher wages, and economic growth boosted projections for the tax revenues needed to make good on debt obligations. As a result, many countries saw their debt to GDP ratio decline significantly in 2022. In the US, public debt declined from 159.9% of GDP to 144%. In Australia, it declined from 2020's high water mark of 92.1% to 70.4%. And in the Netherlands, it declined from 70.2 to 54.3%.[11]

While it looks good on paper, it's important to remember that the debt is still there and could still get larger. Individuals intuitively understand the dilemma this creates for policy makers. Overall, more than three-quarters (77%) of those investors who are still working worry that high levels of public debt in their country will result in reduced retirement benefits down the road. The same is true for 73% of the retirees included in the survey.

When it comes down to it, individuals are concerned about how it will impact their plans for funding retirement. Even among this group of affluent investors, 58% say it will be difficult to make ends meet in retirement without their public benefits. And this includes more than half (53%) of those with $1 million or more in assets.

Public debt isn't the sole reason to be concerned about the future of benefits. In fact, demographics have set off an even louder alarm as developed countries begin to feel the impact of aging populations and declining birth rates.

Public Debt as a Percentage of GDP



Demographics:

The Silver Tsunami makes landfall

Public and private pension managers have known for a long while that economics are only one side of bad math behind retirement security. On the other side of the equation is a demographic storm that is poised to upset traditional funding models in the developed world. At heart of the matter is a confluence of three factors that have long-term implications for retirement.

First, the world population is growing rapidly. In just 70 years, the number of people walking the planet has tripled from just 2.54 billion in 1950 to 7.79 billion in 2020.[12] In simplest terms, the combined population of today's two largest countries, India (1.4B) and China (1.4B), accounts for more people than the total global population at the midpoint of the 20th century.[13] In just 30 years, it is estimated that the global population will approach 10 billion people (9.74 B).

Second, people are living longer. According to OECD data, life expectancy at age 65 has increased dramatically. For example, the life expectancy for women age 65 and older in Australia has increased by more than 40% in 60 years. In 1960, women there could plan on living 15.6 years beyond 65; in 2022, they can plan on living 23 years. Similarly, the average for men has increased by almost 8 years from 12.5 to 20.3 years.

Women – and men – in France, Germany, Japan, Mexico, the UK, the US and other countries have also seen life expectancy at 65 increase. This in itself presents a distinct financial planning challenge for women.[14] In fact, two-thirds of the 8,550 people surveyed (67%) believe women are at a disadvantage when it comes to retirement savings due to longer lifespans and their role as care givers, which can frequently take them out of the workforce for extended periods of time. The problem is even more obvious to those who have retired, among whom 73% see the disadvantage.

In just **70** years, the number of people walking the planet has tripled.

A third factor at play is slowing birth rates in developed countries. According to OECD, countries need a fertility rate of 2.1 children per woman of child-bearing age to maintain a stable population. In 1960, the population in many developed countries was still growing. OECD countries shared an average fertility rate of 3.3. The US was emblematic of that growth, as at the tail end of the postwar baby boom, the fertility rate was above average at 3.7. By 2020, the OECD average had dropped to just 1.56, while it came in at 1.64 in the US.[15]

But two countries underscore just how much of an impact a low birth rate can have. Both Japan (2.0) and Italy (2.4) already had below average birthrates in 1960. By 2022, those rates had dropped to 1.33 and 1.24 respectively.[16] While Japan is most often cited as the example of the challenges presented by low birth rates and aging populations, recent experience in Italy serves to illustrate the challenge.

Recognizing the country faces key demographic risks, the Italian parliament approved the "Pact for the Third Age" in January. A package of sweeping health and social reforms aimed at Italian seniors, the reform introduces a pilot program that brings together most of the civil organizations involved in the assistance and protection of seniors who are no longer self-sufficient and will replace the current national monthly allowance benefit. The rationale for streamlining service is clear as in 2021, those over age 65 accounted for 23.7% of the Italian population, compared to 17.6% across OECD countries. Only in Japan did this group represent a larger share of population at 28.9%.[17]

The math behind retirement benefits no longer adds up

When it comes down to it, public benefits are built on a simple premise: You need more people paying into the system than there are people taking benefits out. The most direct indicator of this is the old-age dependency ratio, which measures the number of people aged 65 or older per 100 people of working age. Since the year 2000, this ratio has been rising rapidly across the developed world, a phenomenon that is still gaining steam.

At the start of the century, the average old-age dependency ratio across OECD countries came in at 22.5. As of this year the ratio has increased to 33.1 – a 47% increase in 23 years. The places where it has accelerated fastest include Japan, where it has nearly doubled from 27.3 to 54.5, Germany (26.5 to 41.4) and Italy (29.2 to 40.9).

But it is in the next 27 years that countries will see the biggest shift. Japan's old-age dependency ratio is expected to reach 80.7 in 2050, and in Italy it will hit 74.4. But the most surprising country in this time frame is likely to be Spain, where old-age dependency will have grown from 26.9 in 2000 to 34.5 in 2023 to 78.4 in 2050.[18]

An aging population accelerates the shift from DB to DC plans

While not facing the same accelerated aging problem, the Netherlands is grappling with the implications an old-age dependency ratio of 37.4 has for its population today. Earlier this year, the Dutch parliament voted in sweeping reforms to its retirement system.[19]

Like most countries, the Netherlands is addressing the challenge in part by raising its national retirement age from today's 66 and four months to 67 and three months by 2028. But similar policy moves are not always welcomed with open arms. Such was the case in France where the decision to raise the retirement age from 62 to 64 resulted in over one million residents taking to the streets in a series of protests between January and June 2023.

Most notable among the changes in the Netherlands is a new emphasis on employer-paid defined contribution plans over defined benefit pensions. Set to take effect in 2025, the move will put more of the onus for saving on individuals, something Dutch investors recognize as 72% say it is increasingly their responsibility to fund retirement on their own – a sentiment shared by 81% of individuals worldwide.

All this at a time when 78% of workers surveyed believe more employers should offer defined benefit plans rather than defined contribution plans. But most individuals do recognize the inherent problem, as 72% globally say that government retirement programs do not take into account that people are living longer.

Knowing the responsibility for retirement funding is landing on them means individuals will need to be clear in their retirement planning and investment assumptions. But data suggest few are.

Planning assumptions:

We have met the enemy, and it is us

Longer lifespans, the potential for declining benefits, and rising costs are just three among a litany of risks that need to be considered in 21st century retirement planning. If individuals are to live up to the responsibility they feel for funding retirement on their own, they will need to step back and analyze where they are today, evaluate how long they have until retirement, and determine what it will take to get there. Unfortunately, many are not starting out with realistic assumptions.

As a starting point, many underestimate what's needed to ensure a secure retirement. Overall, individuals included in the Natixis investor survey are starting with a fair grasp of how long they could possibly live in retirement. Those who are still working think their retirement will last about 20 years. But they would do better by listening to the advice of those who are already retired. Retirees say they anticipate living 25 years after work.

It may not sound like a big difference, but those five extra years could require significantly more savings. It's especially true when considering that as people age, their healthcare costs could increase and the odds of their needing long-term care increase.

But lifespans, which currently stand at 23 years for women at 65 and 20.5 for men in OECD countries, are growing. Those planning on 20 years may want to reconsider how long they will need to fund retirement – particularly when most plan to retire at 61 years old, creating demand for four more years of funding. Given that scenario, even 25 years may be overly optimistic for some individuals.

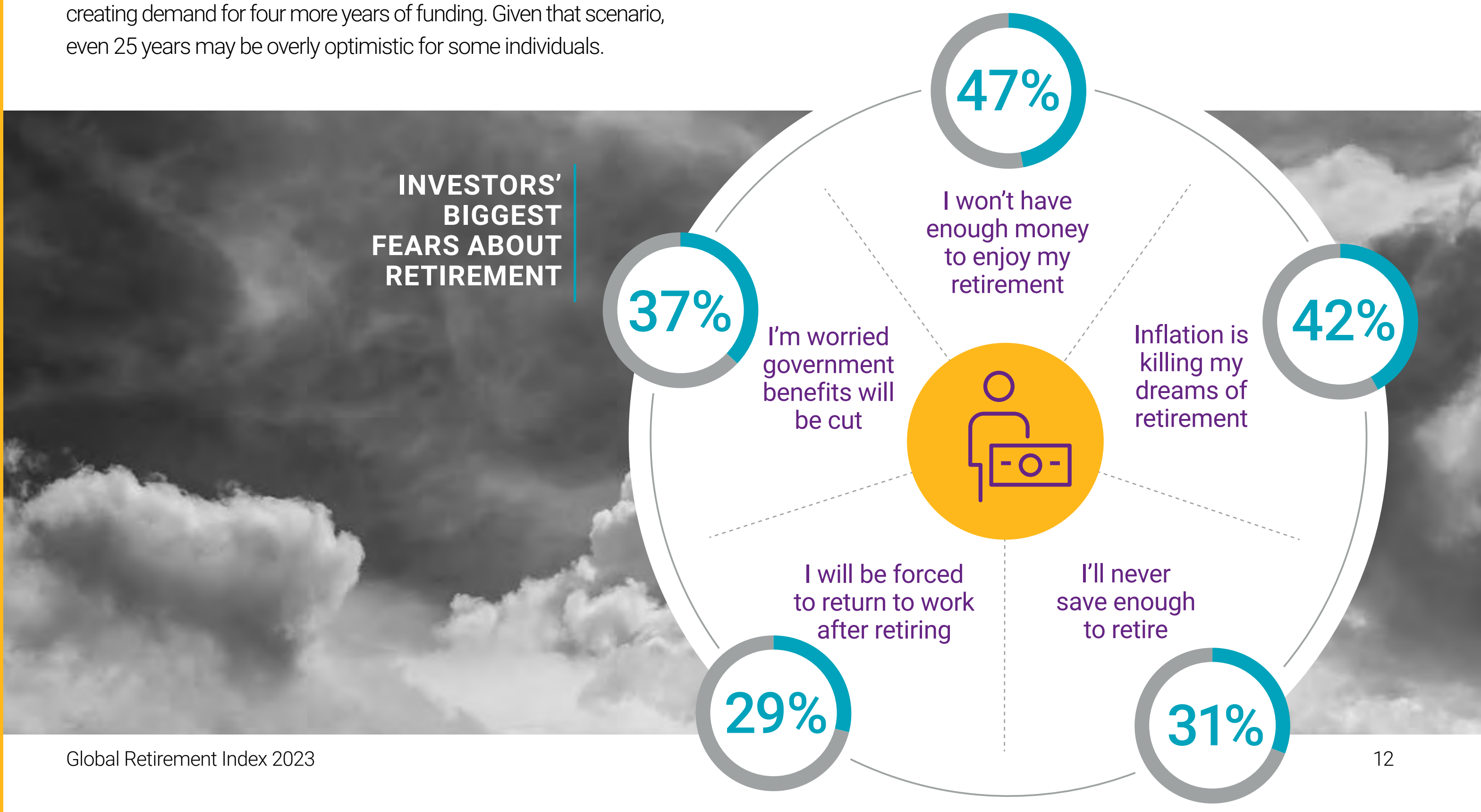
This should be of significant concern, since the median asset level of retirees in the survey group comes in at $625,000 with about $250,000 in retirement accounts. Considering that they also claim a median household income of $150,000, many retirees may not have the cash reserves to carry them the distance.

Overconfidence: another retirement risk

By way of example, a separate survey of defined contribution plan participants in the US conducted in Q1 2023 shows a critical gap between their estimations on retirement and their savings goals. Boomers (age 59+) appear to come closest, as they estimate they will need $1.1 million to fund retirement. Unfortunately, this group has only saved a median of $170,000. However, those who have not yet left the work force recognize they need more time and say they will retire at 70.

Generation Xers (ages 43–58) anticipate needing $1.3 million and living 22 years after retiring at 65. Their saving picture is worse, as they have only saved a median of $81,000. Millennials may pose the biggest challenge, as they think it will only require $891,000 to fund retirement while they believe they will live another 25 years after retiring at 60.[20]

Globally, many individuals already recognize that back-of-the-napkin estimates are likely off, as six in ten believe they will have to work longer than they've planned. That may seem like a simple answer to not saving enough. But what if you can't work as long as you'd planned? It's a question that 46% of working individuals worry about. They have good reason for concern. Many times, retirement isn't a choice. A late career layoff, health issues, or family care issues could all take individuals out of the workforce before they hit their retirement funding targets.



From saving to investing for retirement

Saving alone will not get most people to their retirement goal. Savings accounts and certificates of deposit may have broken free from a decade-long run of low interest rates, but it still isn't enough. Investing in equities has traditionally provided an opportunity for inflation-beating returns. But investors have grown accustomed to the big double-digit returns they've experienced in the past decade, and their recency bias has set them up with unrealistic expectations.

Markets across the globe have rallied for more than a decade, delivering returns well above their historic norms. Even with disastrous 2022 factored into the equation, the S&P 500 delivered average annual total return of 13.99% between 2012 and July 2023, a substantial gain over the 8.93% it averaged between 1991 and 2011. The EuroStoxx also delivered impressive results, delivering an average of 9.77% compared to the 6.68% it averaged between 1991 and 2011. And the Nikkei delivered the biggest turnaround, delivering 14.69% compared to the -3.98% loss it had previously averaged.[21]

It adds up to unrealistic expectations for investors. On average, investors around the globe say they expect their investment to deliver 12.8% above inflation over the long term – a figure that has barely moderated after 2022's deep losses. Even retirees say they expect returns of 10.1% above inflation. Globally, financial advisors say it's more realistic for any investor to expect 9% above inflation. But the global number doesn't tell the whole story.

The gap between what's expected and what's realistic is greatest in the US, where it is 123%. Investors say they expect 15.6%, but advisors call 7% realistic. Australians have an 81% expectations gap between investors' expectations of 12.5% above inflation and advisors' 6.9%. In Hong Kong (12.4% vs. 7.6%) and Canada (10.6% vs. 6.5%) the gap is 63%. In Japan (13.6% vs. 8.7%) it's 56%, and in Italy (9.6% vs. 6.3%) it's 52%.

Despite their optimistic outlook, many investors may find their high expectations for investment returns do not jibe with their tolerance for taking on risk. Overall, 59% globally say they are comfortable taking on risk in order to get ahead. They'll need to be comfortable.

Traditionally, double-digit returns have meant being exposed to higher levels of volatility and higher potential losses. True, these were not issues for much of the past decade, but 2022 was a severe reminder of just how fast fortunes can turn. Investors may want to make a realistic assessment of their ability to take on risk, especially when 74% say they would take safety over investment performance if forced to choose.

Retirees may want to take an even deeper look at their risk concerns. While they want returns of 10.1% above inflation, just 31% are willing to take risk to get ahead and 84% prefer safety over performance.

One down year like last year's -19% loss from the S&P 500®[22] could substantially undermine their ability to maintain a sustainable stream of retirement income over the long term.

INVESTORS' long-term return expectations	Expectations Gap	Financial professionals' realistic expectations (2022)*	EXPECTATIONS GAP BY COUNTRY	RETIREES' long-term return expectations	Expectations Gap	Financial professionals' realistic expectations (2022)*
12.8%	42%	9.0%	Global	10.1%	12%	9.0%
15.6%	123%	7.0%	US	10.0%	43%	7.0%
12.5%	81%	6.9%	Australia	11.3%	64%	6.9%
12.4%	63%	7.6%	Hong Kong	10.0%	32%	7.6%
10.6%	63%	6.5%	Canada	11.1%	70%	6.5%
13.6%	56%	8.7%	Japan	15.1%	74%	8.7%
9.6%	52%	6.3%	Italy	7.1%	13%	6.3%
10.1%	44%	7.0%	Germany	8.4%	20%	7.0%
10.6%	39%	7.6%	Spain	7.6%	0%	7.6%
9.6%	39%	6.9%	Switzerland	7.4%	7%	6.9%
8.9%	35%	6.6%	France	6.4%	-3%	6.6%
8.1%	31%	6.2%	UK	7.4%	20%	6.2%
14.7%	5%	14.0%	Mexico	10.6%	-24%	14.0%
15.1%	4%	14.5%	Chile	14.7%	1%	14.5%

stment Managers, Global Survey of Financial Professionals conducted by CoreData Research in March and April 2022. Survey included 2,700 respondents in 16 countries.

Retirement:

Planning for an uncertain future

Retirement plans have to incorporate a wide range of variables, most of which are well beyond what individuals can control themselves. Fortunately, more than half (53%) of the 998 retirees surveyed in 23 countries have good news to share. They say they've saved enough money that they can have fun in retirement. Unfortunately, it leaves 47% who aren't having fun, including the 31% who say finances are tighter than they expected and 10% who say they are barely hanging on. Another 3% say the struggle has been so hard that they've had to find a job in order to make ends meet. (3% replied "other.")

The responsibility for funding retirement may be falling on the shoulders of individuals and they need to be realistic about their expectations, but that doesn't mean they don't need help. Policymakers and employers both play a critical role in helping them succeed.

Policymakers:

Increase the odds of savings success

There is no way of getting around the fact that the population across the developed world is getting older. Public retirement policy will need to continue supporting retirees along their journey and help remove the barriers to success.

There will be tradeoffs. As individuals in Australia (age 67) and France (age 62) learned this year, increasing minimum retirement ages for public retirement benefits is a key policy tool. But policymakers also must work to ensure that individuals can maximize savings in their working years.

This means maximizing engagement by providing favorable tax treatment on retirement savings to drive participation and engagement rates, and offering incentives for employers to provide workplace savings plans in the first place.

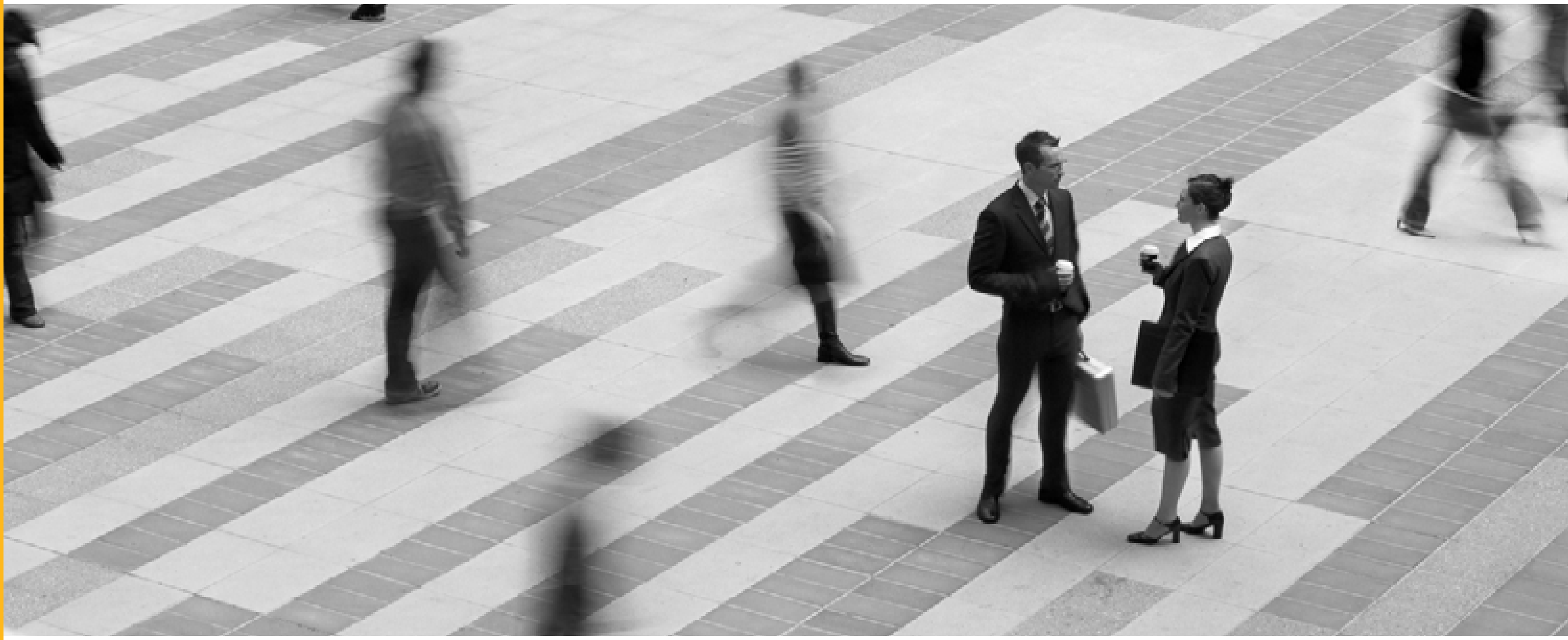
In the US, the SECURE 2.0 act signed into effect at the end of 2022 made significant strides in getting people on the path to save with provisions for auto-enrollment, student loan matches, emergency savings, and increased catch-up contribution limits for workers over age 50.

Similarly, the US Department of Labor's Prudence and Loyalty regulation allows plan sponsors to consider participant preferences in building out retirement plan investment options. For example, employers may offer sustainable investments as plan options – a choice 74% of investors globally say would get them to participate in a company plan or increase their contributions.

In Australia, regulators have been working to strengthen the country's renowned Superannuation savings scheme. Within these priorities the government is currently focused on enshrining the 'Purpose of Super' by more clearly defining its objectives and enhancing member experience and the quality of advice. In addition, the mandatory contribution rate will increase to 12% by 2026.

Though not part of the legislation, Superannuation funds are also being encouraged to develop more innovative products they offer members when they enter retirement, ultimately helping them to annuitize savings and manage income in retirement.

There are still more considerations aimed at improving investment outcomes for plan participants. Advice is a particular concern for individuals. Even as 60% of those surveyed say they fully understand the investment options in their retirement plan, two-thirds say they need professional help in making selections for their portfolio.



Employers: Increase the odds of savings success

Whether it's through defined benefit pensions or defined contribution savings plans, employers are a linchpin in retirement funding. In fact, 82% of individuals surveyed believe companies should be responsible for helping employees achieve retirement security.

But in getting employees to retirement success, the devil is in the details. Employers should put a close eye toward the design of their workplace retirement plan to ensure workers have maximum opportunity. It's critical to leverage the all the opportunities to improve participation and engagement. Auto-enrollment is quickly becoming an accepted standard across the developed world. It can be complemented with auto-escalation features that allow employees to increase contributions on an annual basis.

One of the most important features is the company match. Given today's tight labor market when employers are looking for an edge that helps them attract and retain talent, they should recognize that 77% of individuals worldwide said they would be more likely to work for a company that offers a match.

77%

of individuals worldwide said they would be more likely to work for a company that offers a match.

Individuals: Set realistic goals

Retirement planning can present significant challenges, not the least of which is answering the basic questions: "How much do I need?" and "How long is it going to have to last?" It's easy to respond with "As much as you can" and "As long as it can." But given the state of retirement sentiment in 2023, this is not the time or place for glib answers. Individuals need real, practical advice.

Working with a professional is often an important step in taking retirement planning from emotional to empirical by:

- Defining the parameters for how long retirement could last
- Establishing goals: how much is needed to support a given lifestyle
- Setting realistic expectations: investments based on a clearer understanding of risk

But beyond the plan itself, investment professionals work with individuals for the long term to provide them with real-time feedback on what market movements mean for them and regular updates on how they are progressing.

Even when working with professionals, individuals still need to step up and engage in their retirement savings and take note of key features and benefits that will help increase their odds of success. Because even the glib answer isn't too far off the mark, knowing all the risks, it is important to realize retirement can last a long time and it will take a lot of money. So saving as much as you can and making it last as long as it can is at least a rational response to the retirement funding problem.

Additional Information

About the Survey: Natixis Investment Managers, Global Survey of Individual Investors conducted by CoreData Research in March and April 2023. Survey included 8,550 individual investors in 23 countries.

1. Bloomberg

2. OECD - general government debt 2011 vs. 2008

3. "OECD governments borrowed USD 18 trillion from the markets in 2020, equal to almost 29% of GDP." https://www.oecd.org/daf/fin/public-debt/Sovereign-Borrowing-Outlook-in-OECD-Countries-2021.pdf

4. Bloomberg

5. National Bureau of Statistics of China. (August 9, 2023). Monthly inflation rate in China from July 2021 to July 2023 [Graph]. In Statista. Retrieved August 21, 2023, from https://www.statista.com/statistics/271667/monthly-inflation-rate-in-china/

6. Youth Unemployment Hits High in China. Retrieved August 21, 2023, from https://www.statista.com/chart/30419/monthly-urban-youth-unemployment-rate-in-china/

7. The 2023 Natixis Strategist Outlook is based on responses from 32 experts including 26 representatives from 11 affiliated asset managers, 4 representatives from Natixis Investment Managers Solutions, and 2 representatives from Natixis Corporate & Investment Banking.

8. Bloomberg

9. Bloomberg

10. https://www.oecd.org/daf/fin/private-pensions/PMF-2023-Preliminary-2022-Data.pdf

11. OECD (2023), General government debt (indicator). doi: 10.1787/a0528cc2-en (Accessed on 21 August 2023). https://data.oecd.org/gga/general-government-debt.htm

12. https://www.statista.com/statistics/262875/development-of-the-world-population/

13. WorldData.info, retrieved on 08/22/2023, https://www.worlddata.info/the-largest-countries.php

14. OECD (2023), Life expectancy at 65 (indicator). doi: 10.1787/0e9a3f00-en (Accessed on 21 August 2023)

15. OECD (2023), Fertility rates (indicator). doi: 10.1787/8272fb01-en (Accessed on 21 August 2023)

16. OECD (2023), Fertility rates (indicator). doi: 10.1787/8272fb01-en (Accessed on 21 August 2023)

17. OECD (2023), Elderly population (indicator). doi: 10.1787/8d805ea1-en (Accessed on 21 August 2023)

18. OECD (2023), Old-age dependency ratio (indicator). doi: 10.1787/e0255c98-en (Accessed on 21 August 2023)

19. OECD (2023), Old-age dependency ratio (indicator). doi: 10.1787/e0255c98-en (Accessed on 21 August 2023)

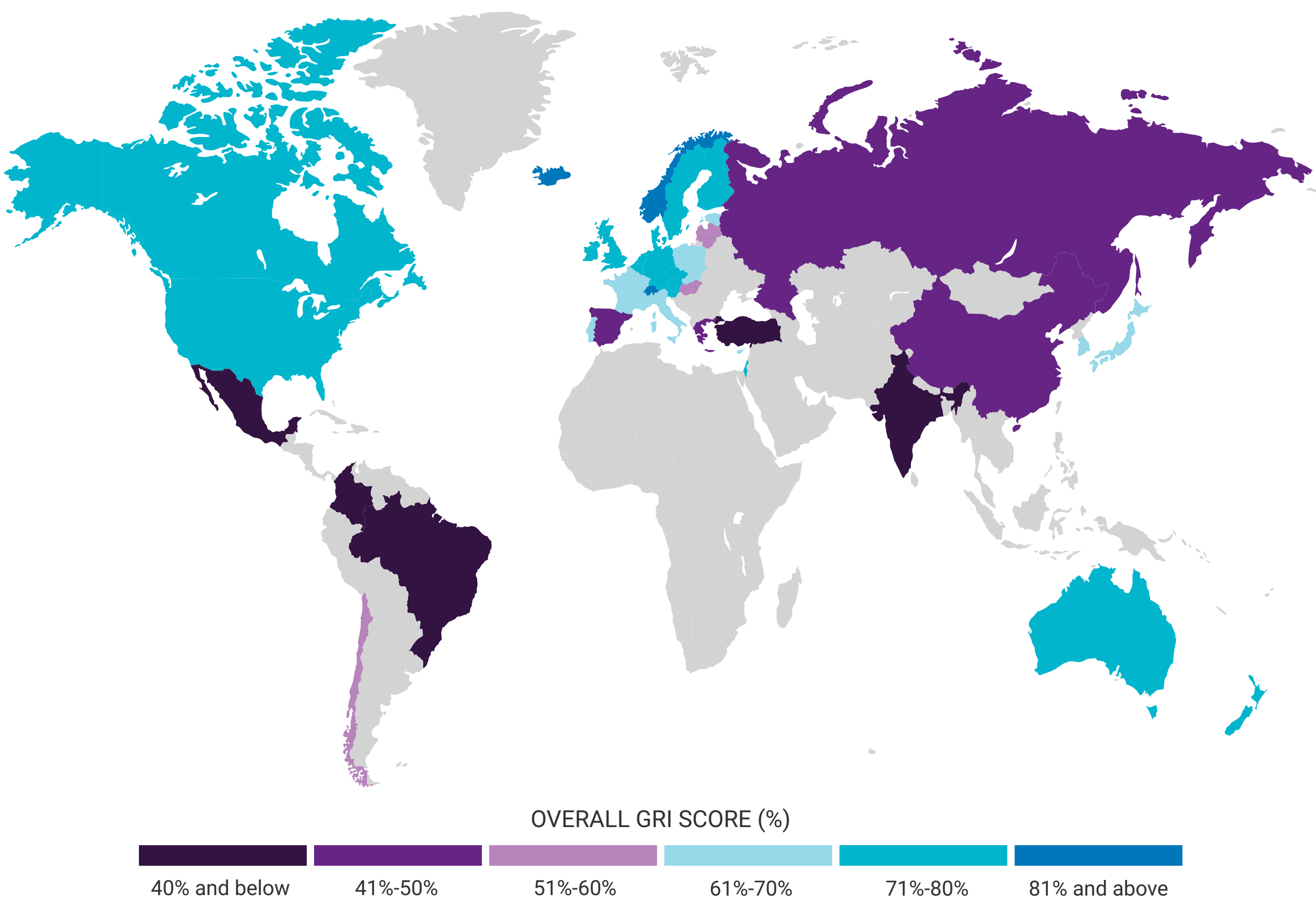
20. Natixis Investment Managers, Survey of US Defined Contribution Plan Participants conducted by CoreData Research, January and February 2023. Survey included 736 US workers, 587 being plan participants and 149 being non-participants. Of the 736 respondents, 362 were Millennials (age 27–42), 166 were Gen X (age 43–58) and 208 were Baby Boomers (age 59 and above).

21. Bloomberg

22. Bloomberg

Global Retirement Index 2023

The Global Retirement Index (GRI) is a multi-dimensional index developed by Natixis Investment Managers and CoreData Research to examine the factors that drive retirement security and to provide a comparison tool for best practices in retirement policy. As the GRI continues to run each year, it is our hope it will be possible to discern ongoing trends in, for instance, the quality of a nation's financial services sector, thereby identifying those variables that can be best managed to ensure a more secure retirement. The country rankings are intended to examine key retirement factors and a discussion of best practices. This is the 12th year Natixis and CoreData have produced the GRI as a guide to the changing decisions facing retirees as they focus on their needs and goals for the future, and where and how to most efficiently preserve wealth while enjoying retirement. The index includes International Monetary Fund (IMF) advanced economies, members of the Organization for Economic Cooperation and Development (OECD) and the BRIC countries (Brazil, Russia, India and China). The researchers calculated a mean score in each category and combined the category scores for a final overall ranking of the 44 nations studied. See page 75: Appendix B for the full list of countries.

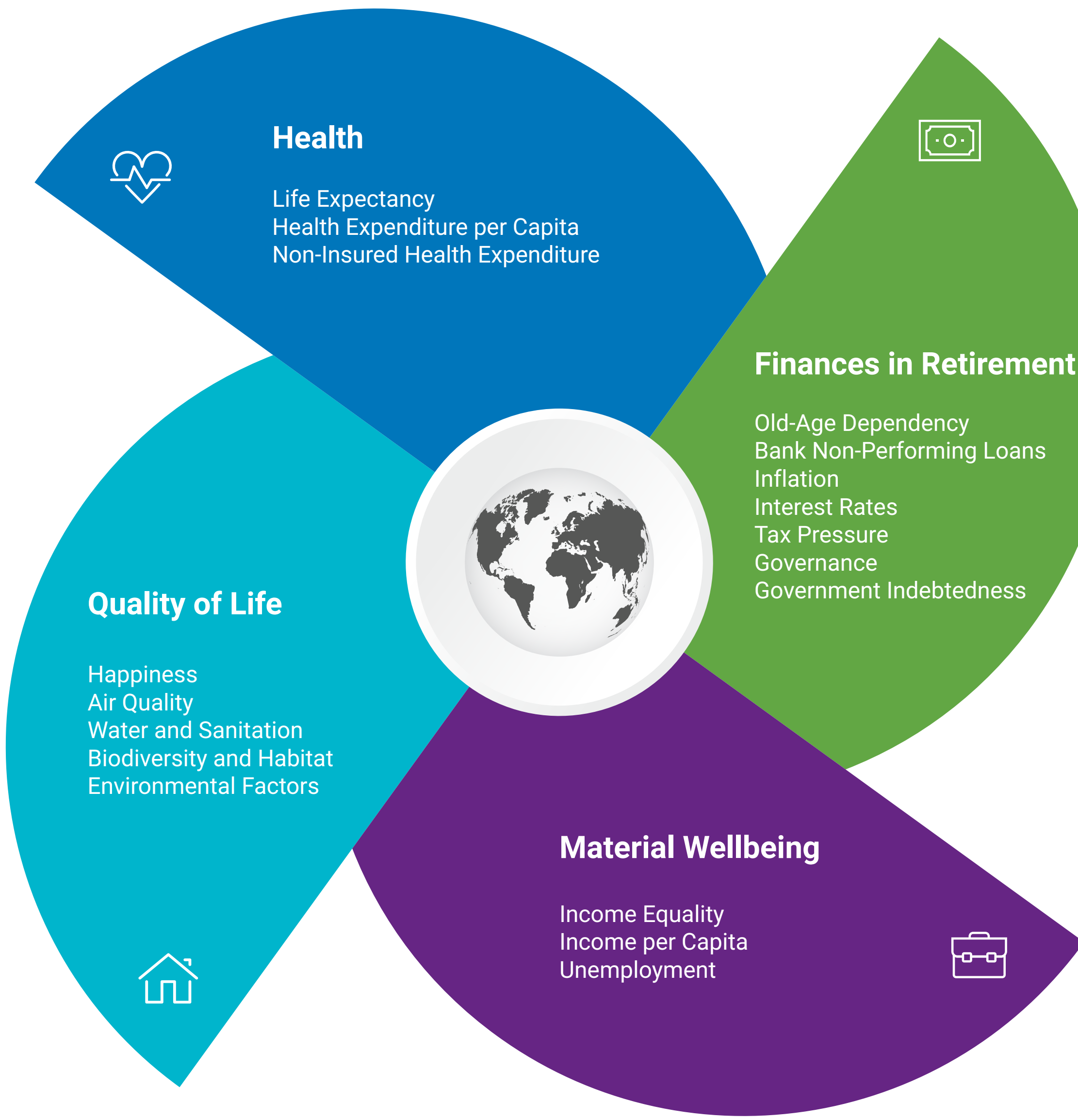


Framework

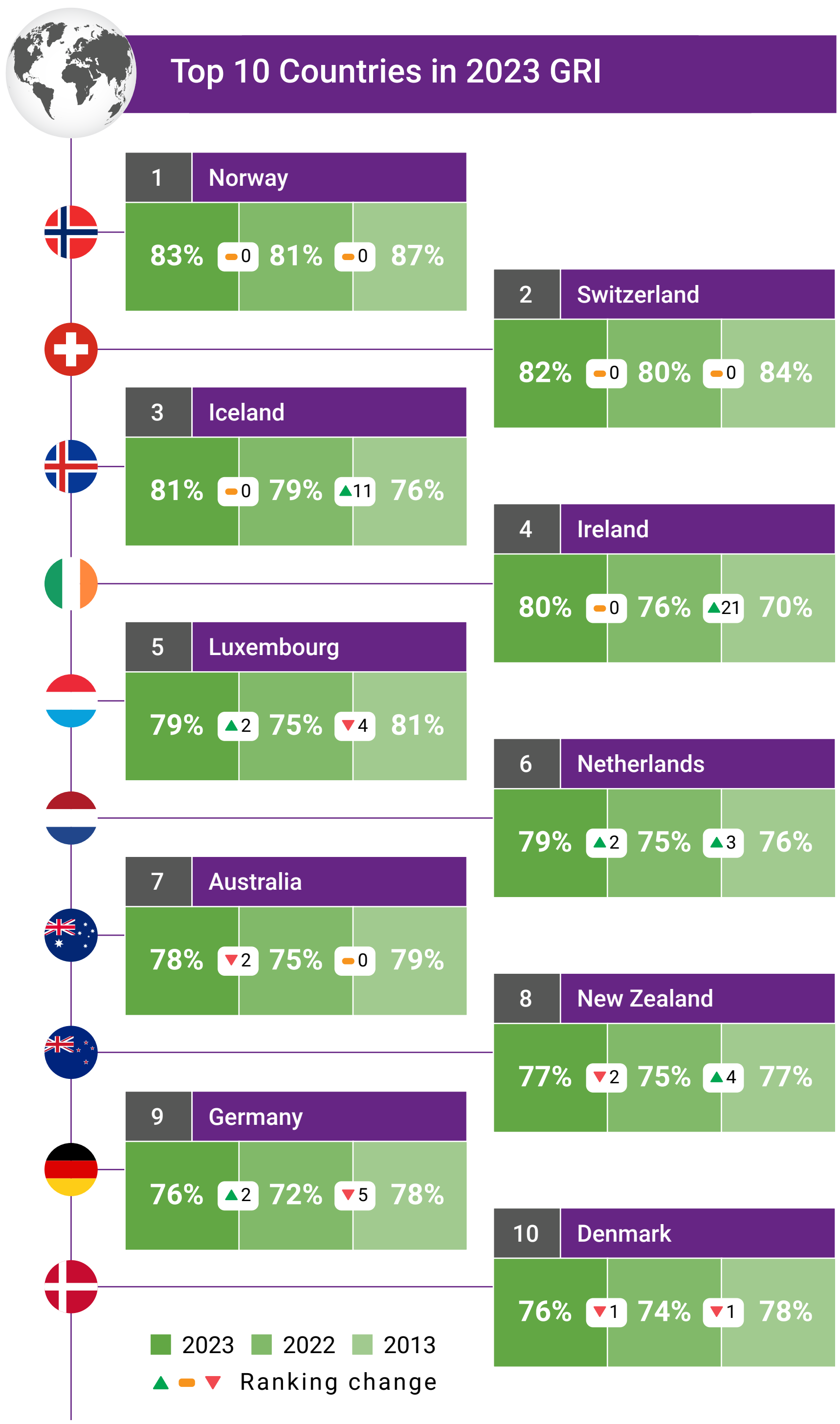
The index incorporates 18 performance indicators, grouped into four thematic sub-indices, which have been calculated on the basis of reliable data from a range of international organizations and academic sources. It takes into account the particular characteristics of the older demographic retiree group in order to assess and compare the level of retirement security in different countries around the world.

The four thematic indices cover key aspects for welfare in retirement: the material means to live comfortably in retirement; access to quality financial services to help preserve savings value and maximize income; access to quality health services; and a clean and safe environment.

The sub-indices provide insight into which particular characteristics are driving an improvement or worsening each country's position. Data has been tracked consistently to provide a basis for year-over-year comparison.



The Best Performers



Norway keeps hold of its first-place title for the second consecutive year, boasting an overall score of 83%. Switzerland, Iceland, and Ireland all retain the same rankings as 2022, underscoring the consistency of these high achievers. In addition, Luxembourg, the Netherlands, Australia, New Zealand, and Denmark all remain in the top ten this year, with rankings of fifth, sixth, seventh, eighth, and tenth, respectively. And while the Czech Republic drops out of the top ten, Germany moves into the top ten with a score of 76%, replacing Denmark in ninth.

Countries in the top ten overall tend to be good allrounders that perform strongly across all sub-indices. However, Norway, Switzerland, and Luxembourg are the only nations to achieve the distinction of ranking in the top ten in each of the four sub-indices. Iceland, Ireland, and the Netherlands finish in the best ten in three out of four sub-indices. The remaining countries in this elite group place in the top ten for at least one sub-index.

This year, the best performers have more consistent rankings across all sub-indices. Among the overall top ten countries, there are seven top ten finishes for Material Wellbeing, Health and Quality of Life, and six for Finances in Retirement. This contrasts with previous years, when some of the best performers excelled in Health and Quality of Life but finished with mid-tier or bottom-tier rankings in Material Wellbeing and Finances. While this remains the case for some countries such as Denmark, others have managed to turnaround weak sub-index performances to ultimately improve their overall rankings. The Netherlands, for example, leaps up the Finances in Retirement sub-index rankings from 26th

to 16th this year. There is a similar story for Luxembourg, which jumps from 21st in Finances last year to 5th, and in the process climbs to 5th in the overall GRI.

Standout performer Norway stays at the top of the GRI and keeps the same rankings as last year in the Health (1st) and Quality of Life (4th) sub-indices. A rise up the rankings in Material Wellbeing (2nd to 1st) is balanced by a decline in Finances in Retirement (8th to 9th).

Switzerland remains second this year with a slightly higher score than 2022. Its rankings are relatively consistent with last year, with the exception of Material Wellbeing, where it surges up the sub-index from 14th to 6th. It also takes the top spot for the Finances in Retirement sub-index, moving up from second in 2022.

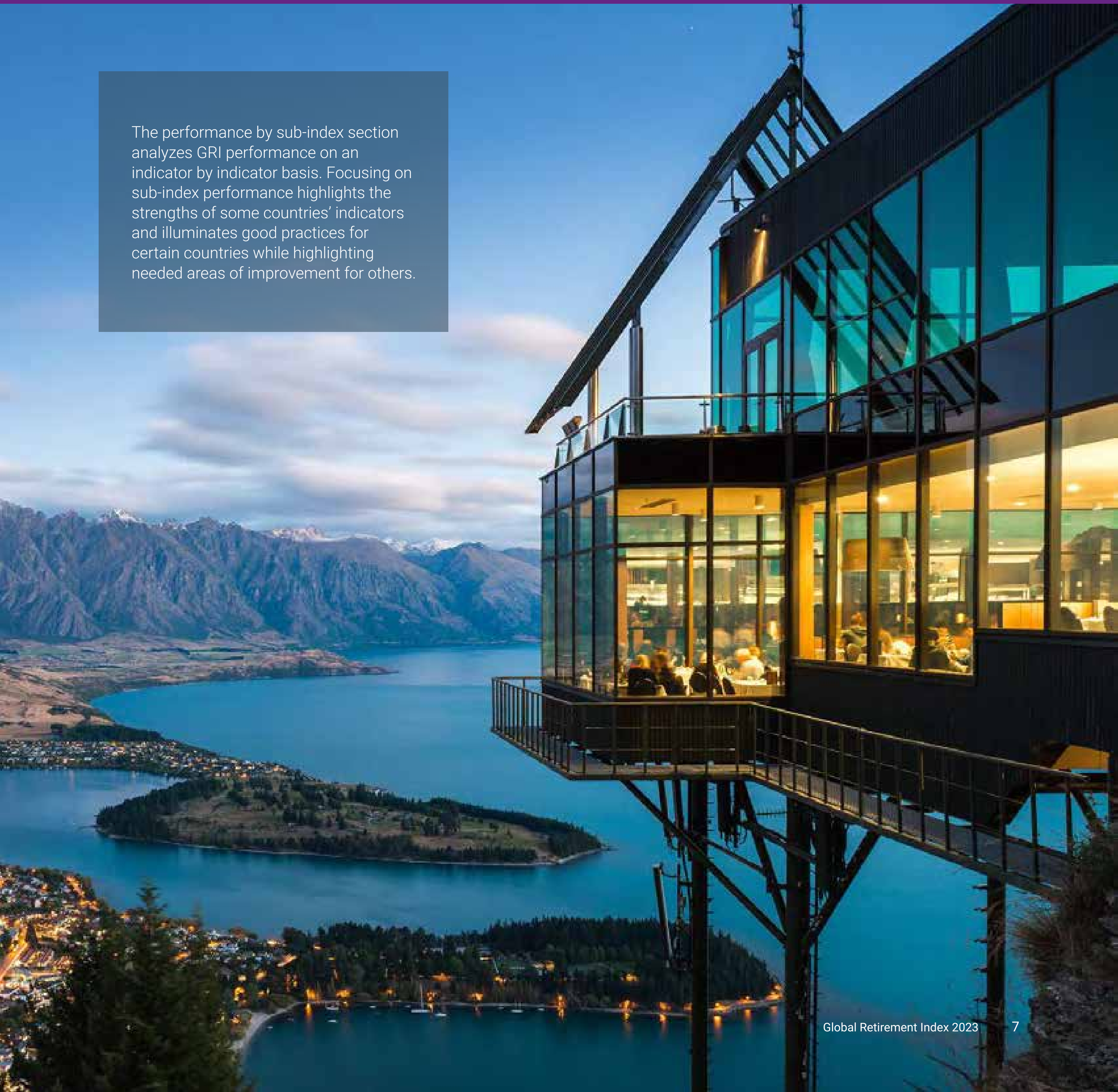
Iceland also maintains its third-place ranking after dropping two places in 2021. It achieves top five finishes in three sub-indices, staging gains in Health (4th), Material Wellbeing (3rd), and Quality of Life (5th). But it drops out of the top ten in Finances in Retirement to 12th.

Luxembourg and the Netherlands both climb two places in the rankings to 5th and 6th respectively, fueled by strong performances across the four sub-indices. In doing so, they outpace Australia which drops out of the top five to 7th, despite recording a slightly better overall score. New Zealand also slips two places this year, from 6th to 8th.

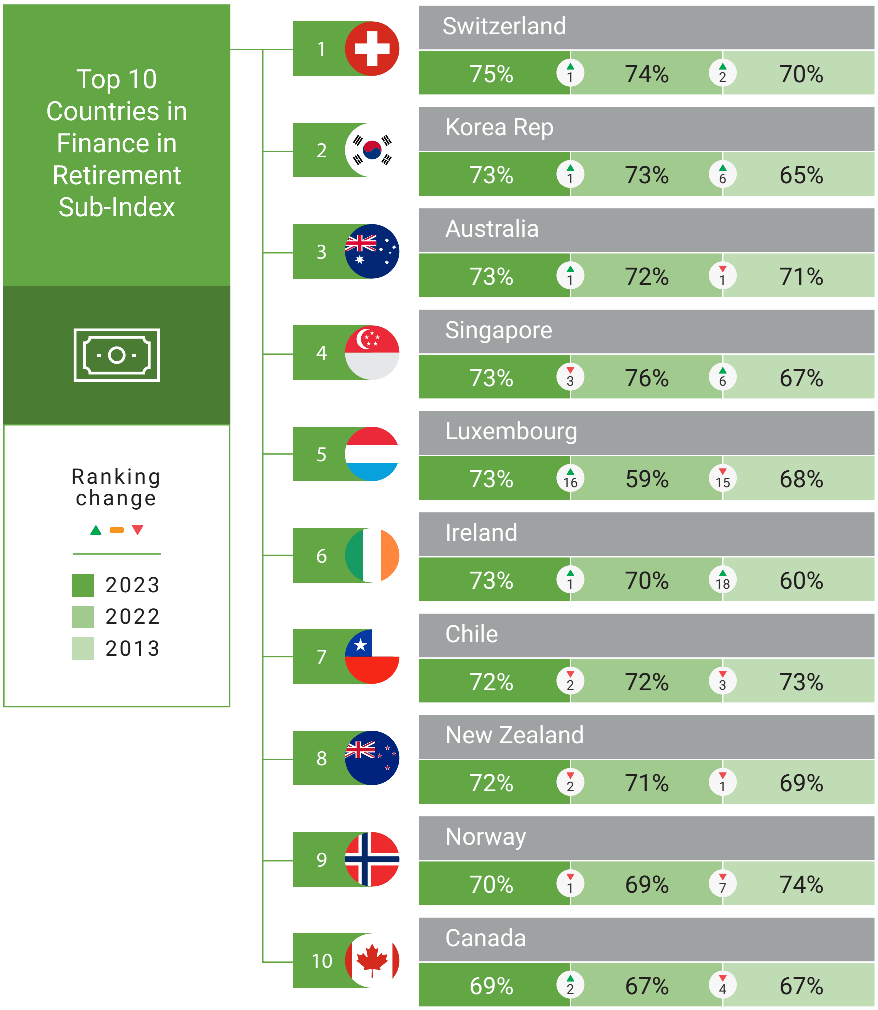
Germany secures a spot in the top ten in this year's GRI, rising from 11th to 9th. This comes on the back of strong improvements in the Finances in Retirement and Material Wellbeing sub-indices. And Denmark completes the GRI top ten, edging down from 9th last year. The drop in ranking is attributable to a sharp fall in the Material Wellbeing sub-index, where Denmark slides from 6th to 12th. More positively, Denmark stages an improvement in Health and Finances in Retirement and stays in second place in Quality of Life.

Performance by Sub-Index

The performance by sub-index section analyzes GRI performance on an indicator by indicator basis. Focusing on sub-index performance highlights the strengths of some countries' indicators and illuminates good practices for certain countries while highlighting needed areas of improvement for others.



Finances in Retirement Index



Switzerland, second in the GRI overall, takes the top spot in the Finances in Retirement sub-index. The sub-index is based on performance across seven indicators: old-age dependency, bank nonperforming loans, inflation, interest rates, tax pressure, government indebtedness, and governance.

Switzerland's top ranking is mainly driven by an improvement in the tax pressure indicator, along with strong performances in the inflation (2nd), governance (4th), bank nonperforming loans (7th), and government indebtedness (9th) indicators. South Korea places in 2nd, increasing from closing out the top three for this sub-index in 2022. South Korea's rise in rank is powered by strong performances in the bank nonperforming loans (1st) and inflation (5th) indicators. Australia also finishes with a higher ranking, moving to 3rd from 4th in 2022. Meanwhile Singapore, which had occupied the sub-index top spot since 2019, drops to 4th. Singapore's decline follows decreases in several indicators including old-age dependency, bank nonperforming loans, inflation, interest rates, and government indebtedness. Luxembourg boasts the most dramatic improvement in this group, leaping sixteen spots to 5th. This is mainly attributable to improvements in the interest rate and tax pressure indicators.

Completing the top ten countries for this sub-index are Ireland, Chile, New Zealand, Norway, and Canada. Ireland rises one spot to 6th from 7th, registering increases in the tax pressure and bank nonperforming loans indicators. Chile falls out of the top five, slipping two places to 7th. New Zealand also falls two spots to 8th from 6th, with a sharp decrease in the government indebtedness indicator. Norway slips in ranking from 8th to 9th, while Canada jumps from 12th to 10th, with increases in the tax pressure and bank nonperforming loans indicators.

After the top ten, the next five countries in the Finances in Retirement sub-index are Israel, Iceland, the United States, Estonia, and the United Kingdom. Israel increases its score in the Finances in Retirement sub-index by two-percentage points, gaining two spots to 11th from 13th. While Iceland maintains the same score in this sub-index as the previous year, its ranking slips two spots to 12th. The United States also experiences the same phenomena, losing two spots while maintaining the same score as 2022. Estonia falls out of the top ten to 14th owing to a substantial decrease in the inflation indicator. The United Kingdom jumps fourteen places to 16th following improvements in the interest rate, tax pressure, and government indebtedness indicators.

The countries occupying 16th to 20th place in the Finances in Retirement sub-index are the Netherlands, Lithuania, Sweden, Malta, and Germany. The Netherlands jumps ten places to 16th, posting a ten-percentage point increase since last year. Also registering gains are Lithuania and Sweden, with both increase their overall score by eleven and ten percentage points, respectively. Malta slips three rankings despite increasing its overall score in the Finances in Retirement sub-index. Germany leaps ten places to 20th, closing out the top twenty countries for this sub-index.

Rounding out the top 25 countries for the Finances in Retirement sub-index are China, Finland, the Czech Republic, Mexico, and India. China slides down the rankings from 14th to 21st this year, while Finland climbs up six spots into the top 25. The Czech Republic also falls eight places to 23rd, down from 15th in 2022. Mexico also registers a decrease in ranking to 24th, despite a slight increase of one-percentage point. India closes out the top 25 countries for this sub-index, sliding down seven places from 18th in the previous year.

Top 25 Countries in Finances in Retirement Sub-Index	Ranking			Score		
	2023	2022	2013	2023	2022	2013
Switzerland	1	2	4	75%	74%	70%
Korea Rep	2	3	9	73%	73%	65%
Australia	3	4	3	73%	72%	71%
Singapore	4	1	7	73%	76%	67%
Luxembourg	5	21	6	73%	59%	68%
Ireland	6	7	25	73%	70%	60%
Chile	7	5	2	72%	72%	73%
New Zealand	8	6	5	72%	71%	69%
Norway	9	8	1	70%	69%	74%
Canada	10	12	8	69%	67%	67%
Israel	11	13	20	68%	66%	60%
Iceland	12	10	37	68%	68%	54%
United States	13	11	12	67%	67%	63%
Estonia	14	9	14	67%	68%	62%
United Kingdom	15	29	34	66%	55%	56%
Netherlands	16	26	35	66%	56%	55%
Lithuania	17	31	29	65%	54%	58%
Sweden	18	27	13	65%	56%	63%
Malta	19	16	21	65%	63%	60%
Germany	20	30	18	64%	55%	61%
China	21	14	33	64%	65%	56%
Finland	22	28	11	63%	55%	65%
Czech Republic	23	15	16	63%	64%	61%
Mexico	24	19	10	63%	62%	65%
India	25	18	44	63%	62%	39%

Color Scale: 0%-60% | 61%-70% | 71%-80% | 81%-90% | 91%-100%

Spotlight

The Australian superannuation system – a model for other nations?

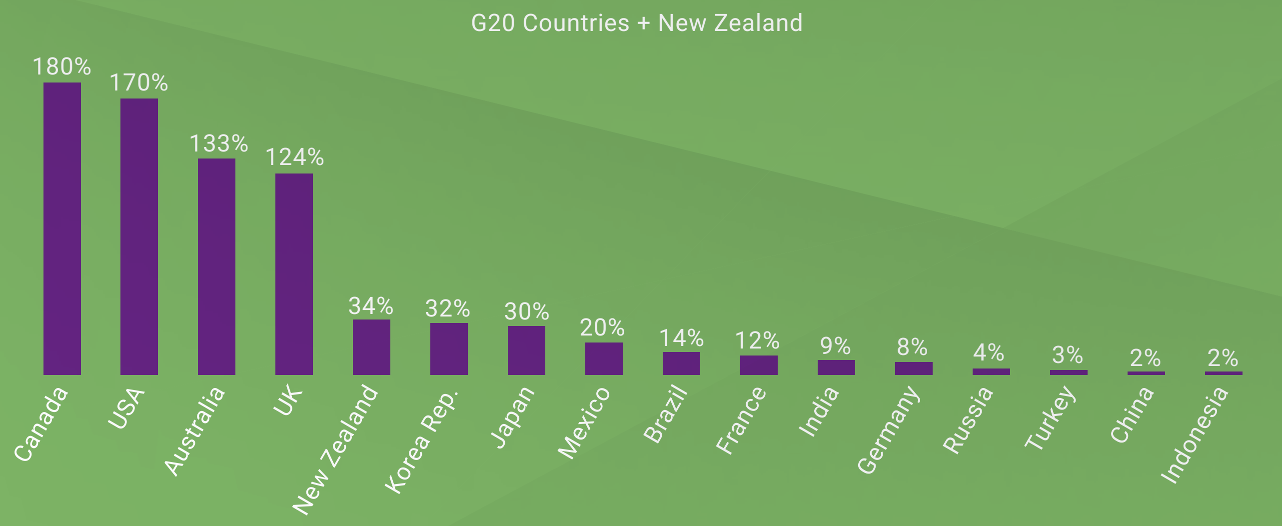
The superannuation fund system in Australia consistently ranks among the best pension systems globally,[1] currently managing over $3.4 trillion in assets[2] for its members, while Australia has ranked within the top 10 countries in the Global Retirement Index each year since its inception in 2012. Australia has the third-largest ratio of assets to GDP among G20 countries, with this rate significantly outpacing its regional neighbors.

The system has driven strong member outcomes since the introduction of the Superannuation Guarantee in 1992. Despite the success of the system overall, few nations have implemented similar pension systems in their own countries. Since 2021 a series of changes have been pushed through, with the aim of further enhancing retirement security and driving better financial outcomes for members. Could these changes create additional proof points that lead other countries – particularly developing nations – to look to Australia as a pension system to model their own structures after?

The hallmark of the superannuation system is the Superannuation Guarantee, which requires most employers to contribute a percentage of each employee's income to their super account (alongside any voluntary contributions on the part of the individual). In order to maintain financial security for future retirees, the compulsory contribution rate has experienced a steady increase over recent years. Further scheduled increases are on the horizon which will bring the current 10.5% contribution rate up to 12% by 2025[3].

[1] https://www.mercer.com/insights/investments/market-outlook-and-trends/mercer-cfa-global-pension-index/
[2] https://www.superannuation.asn.au/resources/superannuation-statistics
[3] https://www.superannuation.asn.au/policy/12-superannuation-guarantee

Pension Fund Assets as a % of GDP



Source: World Bank 2020

One key trend in the super fund industry is the recent consolidation that has stemmed from multiple strategies implemented in the past few years by the Australian Prudential Regulation Authority (APRA) and the Your Future, Your Super Act. The softer of these strategies centered around greater transparency for members regarding fund performance. The introduction of "heat maps" allowed members to evaluate factors like their super fund's investment performance, fees, and sustainability strategies. An accompanying online comparison tool facilitated members to see how their current fund benchmarks against others, and more importantly functioned to encourage members to shift their accounts to the better performing, and often larger, super funds. The stricter APRA mandate is the Annual Performance Test, which evaluates each super fund's performance against a benchmark of their peers. Failure of the test requires a fund to notify its members of the result, while failure in consecutive years results in the fund being restricted from accepting new members. In practice, failing the Annual Performance Test can often lead to a mass exodus of members as they seek out better performing funds, consolidating the industry further around its top performers and often largest funds.

One potential drawback to the APRA and Your Future, Your Super regulations is the motivation for funds to hug the benchmark and take an approach that is more risk-averse than they would otherwise be. One casualty of this dynamic arises in regard to sustainable investing, with an eye towards Australia's goal of net-zero carbon impact by 2050. On an individual fund level there is a tradeoff between sustainable investing initiatives and hewing to the wider performance benchmarks, as well as the "members' best financial interests" requirement. Some more innovative approaches to sustainable investing may be stymied by the risk-averse environment created by the Annual Performance Test. Similarly, during bullish market cycles, super funds may be wary of adding any risk protection to their portfolios if it could sacrifice returns relative to the benchmark – setting up a greater potential decline if and when markets turn bearish.

Nevertheless, the industry has shrunk from a total of 174 funds in February 2022 to 145 in March 2023[4]. Based on a J.P. Morgan survey of super fund managers conducted in early 2022, the pace of mergers is expected to continue apace over the coming years. About half of those surveyed expect there to be fewer than 75 funds by 2025, while a quarter expect fewer than 50 funds by that time.[5] The consolidation of funds is expected to have multiple benefits for members. One such factor is a reduction in administrative fees as larger funds realize the benefits of scale. Additionally, mega funds have the advantage of better access to larger and/or higher quality illiquid assets with greater return potential. However, the pace of mergers has begun to slow recently as the purported benefits of larger funds for members have come under closer

[4] https://www.superannuation.asn.au/resources/superannuation-statistics
[5] https://www.jpmorgan.com/content/dam/jpm/cib/complex/content/markets/futue-of-superannuation/SuperA_Final_Web_Final.pdf

scrutiny. This comes alongside more challenges as funds with disparate memberships, investment philosophies, etc. struggle with the practical matters of merging. The path through these challenges for funds that succeed could help inform the structural decisions of other nations seeking to replicate the most successful aspects of the Australian system.

The superannuation system has succeeded over the past 30 plus years in creating greater financial security in retirement for Australians. As the intertwined changes around performance requirements and fund consolidation occur over the next few years, we will see additional proof points around what does or does not make such a system successful. In particular, the aging of Australia's population will shine a spotlight on how super funds perform as the focus shifts towards distribution for a growing portion of the membership – providing another test on the system and helping to illuminate both the strengths and weaknesses to inform pension system decisions other countries may be considering.

The compulsory contributions from employers have led to strong outcomes regarding retirement savings. In a Natixis survey of over 8,500 individuals globally,[6] 82% of respondents said they believe companies should be responsible for helping employees achieve retirement security. Additionally, a survey of 750 defined-contribution plan participants in the US showed that 78% think that employer matching contributions to retirement plans should be mandatory, while 69% believe individual contributions to retirement savings should be mandatory.[7] These findings show a widespread appetite among the public for compulsory retirement contributions and support the likelihood of superannuation-style funds succeeding elsewhere in the world.

Australia has exhibited a clear template for other nations to make progress on improving retirement security, but only time will tell if recent changes lead to further improvements or have unintended negative consequences. The Australian system's experience over the coming years will demonstrate multiple pathways for other countries to implement a similar pension scheme while tailoring specific elements to fit their unique savings and investing environments.

[6] 2023 Natixis Individual Investor Survey
[7] 2023 Natixis DC Plan Participants Survey

Material Wellbeing Index

Top 10 Countries in Material Wellbeing Sub-Index

Rank	Country	2023	Ranking change	2022	Ranking change	2013
1	Norway	84%	▲ 1	79%	▼ 1	98%
2	Slovenia	83%	▲ 2	77%	▲ 10	81%
3	Iceland	83%	▲ 2	77%	▲ 1	85%
4	Czech Republic	82%	▼ 3	84%	▲ 12	81%
5	Netherlands	82%	▼ 2	78%	▲ 2	86%
6	Switzerland	79%	▲ 8	69%	▼ 10	87%
7	Ireland	79%	▲ 10	67%	▲ 13	64%
8	Germany	77%	▲ 3	71%	▼ 1	82%
9	Malta	73%	▼ 1	72%	▲ 7	80%
10	Luxembourg	73%	▼ 1	72%	▼ 7	90%

Ranking change ▲ ▬ ▼

2023
2022
2013

Norway also takes the lead in the Material Wellbeing sub-index, stepping up from 2nd in 2022. The improved ranking results from gains in income per capita, where Norway climbs to 2nd, and unemployment. Also moving up the sub-index table this year are Slovenia, from 4th to 2nd, and Iceland which ascends two spots to 3rd. The countries in the top three all increase their sub-index score by approximately six points. The Material Wellbeing sub-index is based on performance across three indicators: income equality, income per capita, and unemployment.

The Czech Republic and the Netherlands complete the top five for the Material Wellbeing sub-index. The Czech Republic, which took 1st place last year, sees its overall score drop two points as it falls down the rankings to 4th. This follows a deterioration in the country's income equality and income per capita scores. But with the lowest unemployment rate in the EU, the Czech Republic holds onto top spot in the unemployment indicator. Meanwhile, the Netherlands drops from 3rd to 5th amid a lower score in the income per capita indicator.

The remaining five countries in the sub-index top ten are all European. Of these, Switzerland, Ireland, and Germany manage to improve their rankings from last year. Switzerland, which sees its Material Wellbeing score increase almost ten percentage points, jumps eight places to 6th. But Ireland stages an even greater improvement, with a twelve-percentage point score increase powering it ten spots up the sub-index rankings to 7th. Germany also rises up the Material Wellbeing table and breaks into the top ten after jumping from 11th to 8th with a six-percentage point increase. Elsewhere, Malta and Luxembourg both lose a place in the rankings, with Malta slipping from 8th to 9th and Luxembourg sliding from 9th to 10th. Despite the overall rankings drop, Malta has a standout performance in the unemployment indicator, where it boosts its score by ten percentage points to finish joint top.

The 11th to 15th rankings are held by Austria, Denmark, Australia, South Korea, and Belgium. Among this group, three countries rise up the sub-index rankings. Austria climbs four places to 11th due to gains in the unemployment indicator, while Australia ascends six spots to 13th following improvements in the unemployment and income equality indicators. And South Korea also moves up from 16th to 14th, driven by increases in the unemployment and income equality indicators. Meanwhile, Denmark slides out of the top ten, falling from 6th to 12th, due to losses in the unemployment and income per capita indicators. And Belgium closes out the top fifteen, sliding two places from 13th, despite seeing an increase in its Material Wellbeing sub-index score.

Hungary, New Zealand, Japan, Canada, and the Slovak Republic complete the Material Wellbeing top twenty. Hungary drops from 12th to 16th in the sub-index following a slight deterioration in its income per capita score. New Zealand ascends three spots to 17th, while Japan falls eight places to 18th following losses in income equality and income per capita. Meanwhile, Canada secures a spot in the top twenty after a noteworthy rise up the rankings from 27th to 19th. This comes as a result of significant gains in the unemployment and income equality indicators. The Slovak Republic completes the top twenty, receding from 18th in the previous year.

The United States, United Kingdom, Poland, Israel, and Finland take up the 21st to 25th positions. The United States leaps nine places up the rankings to 21st following a score increase of ten percentage points. The United Kingdom gains one place to 22nd. But Poland dramatically falls out of the top ten and records the greatest drop in ranking, plunging from 7th to 23rd. Its sub-index score is dragged lower by a sharp decline in the unemployment score and a less pronounced decrease in income per capita. Israel edges up one spot in the sub-index table to 24th, while Finland closes out the top 25 after falling from 21st last year.

Top 25 Countries in Material Wellbeing Sub-Index	Ranking			Score		
	2023	2022	2013	2023	2022	2013
Norway	1	2	1	84%	79%	98%
Slovenia	2	4	14	83%	77%	81%
Iceland	3	5	6	83%	77%	85%
Czech Republic	4	1	13	82%	84%	81%
Netherlands	5	3	5	82%	78%	86%
Switzerland	6	14	4	79%	69%	87%
Ireland	7	17	30	79%	67%	64%
Germany	8	11	10	77%	71%	82%
Malta	9	8	15	73%	72%	80%
Luxembourg	10	9	2	73%	72%	90%
Austria	11	15	3	72%	69%	90%
Denmark	12	6	7	72%	76%	84%
Australia	13	19	16	72%	66%	77%
Korea Rep	14	16	9	71%	68%	83%
Belgium	15	13	8	71%	70%	83%
Hungary	16	12	23	70%	70%	72%
New Zealand	17	20	20	70%	64%	75%
Japan	18	10	17	70%	72%	77%
Canada	19	27	19	69%	58%	75%
Slovak Republic	20	18	24	67%	67%	71%
United States	21	30	28	66%	56%	65%
United Kingdom	22	23	25	65%	61%	71%
Poland	23	7	27	64%	75%	67%
Israel	24	25	26	64%	60%	67%
Finland	25	21	12	64%	63%	82%

Color Scale: 0%-60% | 61%-70% | 71%-80% | 81%-90% | 91%-100%

Spotlight

Japan offers a warning – and lessons – for the aging developed world

Japan's population has the largest share of adults over age 65 in the world,[1] with retirement age Japanese making up about 30% of the population, compared to less than 25% in other rapidly aging countries.[2]

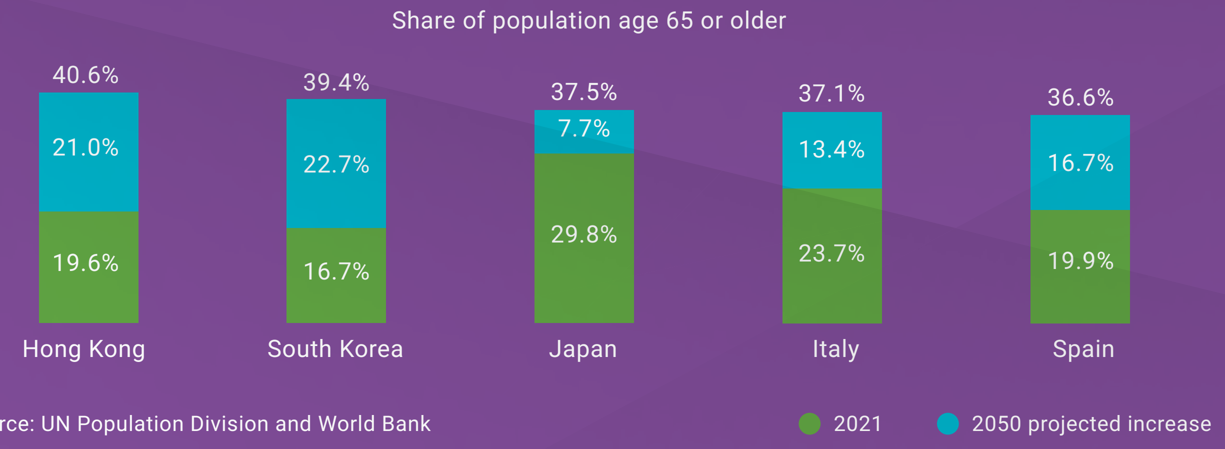
Japan faces an acute mix of demographic pressures that have pushed it ahead of the curve relative to the rest of the OECD. Notably, its life expectancy has been the best in the world for more than 40 years, it has employed a strict immigration policy, and it had a much shorter post-war baby boom compared to the G7 countries.[3] Since many other countries are on a similar demographic trajectory, Japan offers a glimpse into their futures. According to the UN Population Division, by 2050, 6 countries will have a retirement age cohort larger than 36% of their population, including Hong Kong, South Korea, Italy and Spain.

While there are important differences in the social systems and structures of those facing the aging population dilemma, the reality is that if the underlying trends are not reversed, welfare models built on government and worker support of the elderly will reach a breaking point. Japanese Prime minister Fumio Kishida recently warned that they are approaching this critical juncture, saying "Our nation is on the cusp of whether it can maintain its societal functions."

There are three main ways that governments can get on a more sustainable path: 1) increase the size of the working age population via immigration and/or policies to encourage fertility; 2) reduce and/or shift the cost burden of elderly support e.g., raise the retirement age, encourage senior participation in the workforce; and 3) find ways to do more with less e.g., increase productivity through investments in technology and automation.

[1] Among countries with at least 1 million people
[2] https://www.statista.com/chart/29345/countries-and-territories-with-the-highest-share-of-people-aged-65-and-older/
[3] https://www.imf.org/en/Publications/fandd/issues/2020/03/shrinkanomics-policy-lessons-from-japan-on-population-aging-schneider

World’s Oldest Countries in 2050



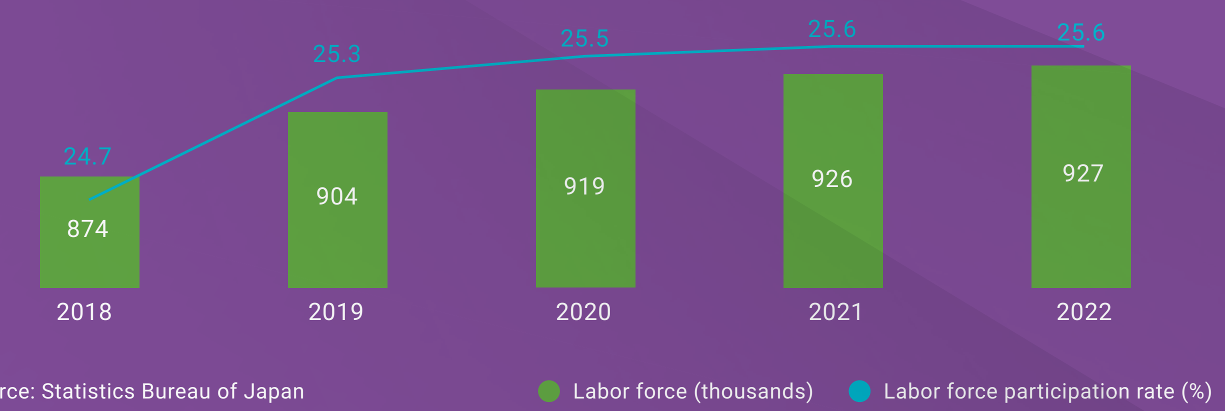
Source: UN Population Division and World Bank

Japan has enacted policies in all three areas with varying success. Allowing more immigration is the most impactful and immediate way to assuage the problem, and while the government is now granting residency to marginally more immigrants than in the past, it’s not at the level needed to arrest population declines.

The government has improved conditions for child rearing (e.g., providing cash incentives, longer family leave, etc.) and recently the prime minister announced plans to create a new agency and double spending on family benefits by June 2023. This new action could yield results but there is skepticism about the influence these policies have on fertility.

Japan has had success in increasing the labor force among seniors, driven primarily by an increase in the retirement age and a reduction in benefits.[4] About 40% of this cohort say they are interested in earning income (compared to 30% in the US[5]). However, the growth of this segment has recently stalled, suggesting that future labor force gains may need to come from elsewhere.

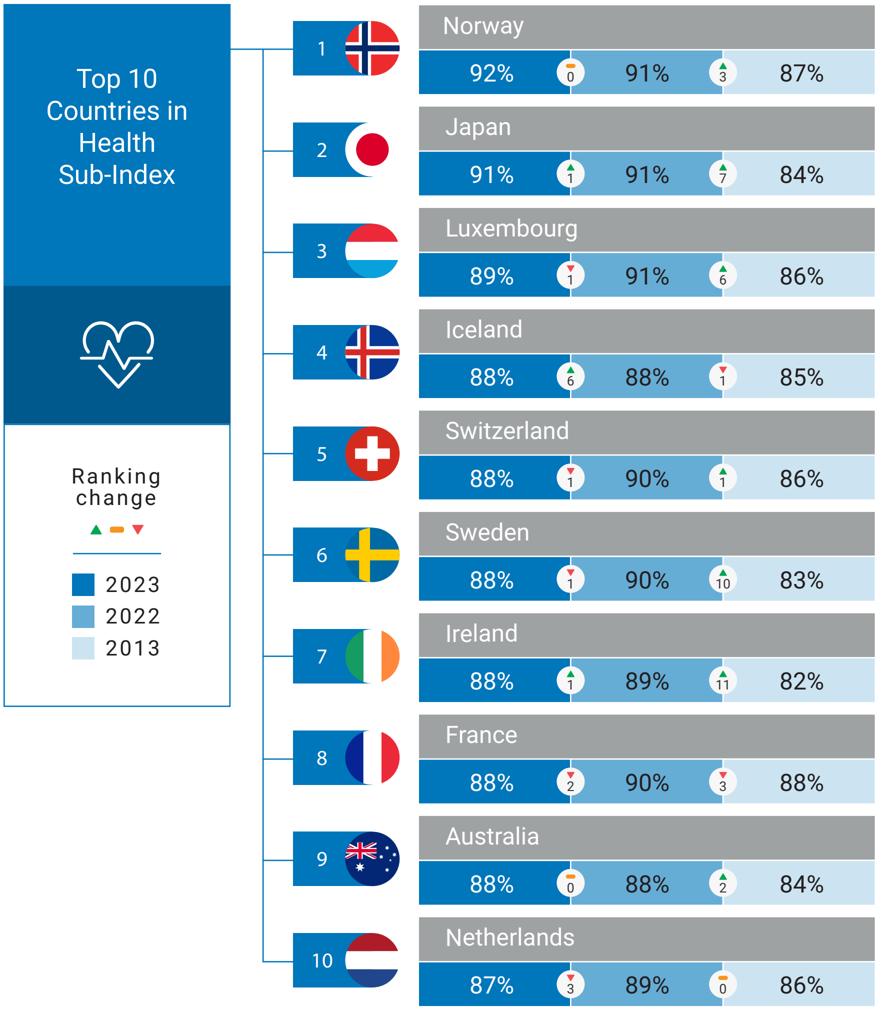
Japan’s Over 65 Labor Force



Source: Statistics Bureau of Japan

[4] https://www.nber.org/system/files/working_papers/w24614/w24614.pdf
[5] https://www.wsj.com/articles/incredible-shrinking-japan-births-overpopulation-children-motherhood-babies-marriage-family-birth-rate-429dc84b

Health Index



Norway remains in pole position in the Health sub-index this year. While Japan moves up one place from 3rd to 2nd, Luxembourg moves in the opposite direction and slips from 2nd to 3rd. The Health sub-index is based on performance across three indicators: insured health expenditure, life expectancy and health expenditure per capita. Life expectancy is a key driver of overall performance in the sub-index.

Norway achieves a higher overall score in the sub-index due to an improved ranking in life expectancy, where it climbs from 8th in 2022 to 4th. But Japan clinches first place for the life expectancy indicator and in the process improves its overall sub-index ranking. Conversely, Luxembourg slips one spot in the sub-index to 3rd as its life expectancy decreases and its indicator ranking consequently drops to 18th from 14th. Iceland and Switzerland close out the top five for the sub-index, with Iceland recording the biggest jump up the rankings from 10th to 4th. Meanwhile, Switzerland edges down one place to 5th in the sub-index after falling from 2nd to 6th in the life expectancy rankings. And Sweden, which descends from 7th to 10th in life expectancy, falls out of the sub-index top five after dropping one place to 6th.

Completing the top ten are Ireland, France, Australia, and the Netherlands. While Ireland nudges up from 8th to 7th, France descends from 6th to 8th. Australia stays steady at 9th in the sub-index but manages to enter the top five in life expectancy by climbing four places from 9th last year. The Netherlands slips three rankings from 7th last year to close out the Health sub-index top ten. This comes as the country falls down the life expectancy rankings from 17th to 20th.

Denmark, Germany, Canada, New Zealand, and Finland occupy the 11th to 15th spots in the Health sub-index. Denmark ascends two places up the rankings table to 11th, despite its life expectancy score staying static. And Germany manages to retain 12th place this year, albeit finishing with a slightly lower life expectancy score. Meanwhile, New Zealand rises two positions up the Health rankings to 14th after leaping six places in life expectancy from 22nd to 16th. And Finland moves up four places to 15th in the wake of an improved life expectancy ranking.

The next five countries down the table are Austria, Belgium, the United Kingdom, Singapore, and Spain. Austria descends from 14th to 16th, following a seven-point decrease in life expectancy. Belgium also loses two places in the rankings, dropping to 17th, amid an eight-point slide in life expectancy. Meanwhile, the United Kingdom breaks into the Health sub-index top twenty after moving up three places from 21st to 18th. Singapore also improves its sub-index ranking, from 23rd to 19th, and performs particularly well in life expectancy where it finishes 2nd, up from 3rd last year. And Spain closes out the top twenty for the Health sub-index, but falls two places from 18th in 2022. This comes as Spain drops out of the top five for life expectancy with a lower ranking (4th to 12th) and score (94% to 84%).

The last five countries in the top 25 are Italy, Israel, Slovenia, South Korea, and the United States. Italy loses one place to 21st, while Israel gains two spots to 22nd. Israel's higher ranking follows a better performance in life expectancy, where it improves from 10th last year to 8th. Meanwhile, Slovenia moves down one position to 23rd in the sub-index, while South Korea steps up one spot to 24th. And the United States completes the top 25, with a lower ranking (17th to 25th) attributable to a sizable decline in the life expectancy indicator.

Top 25 Countries in Health Sub-Index	Ranking			Score		
	2023	2022	2013	2023	2022	2013
Norway	1	1	4	92%	91%	87%
Japan	2	3	10	91%	91%	84%
Luxembourg	3	2	8	89%	91%	86%
Iceland	4	10	9	88%	88%	85%
Switzerland	5	4	5	88%	90%	86%
Sweden	6	5	15	88%	90%	83%
Ireland	7	8	19	88%	89%	82%
France	8	6	3	88%	90%	88%
Australia	9	9	11	88%	88%	84%
Netherlands	10	7	7	87%	89%	86%
Denmark	11	13	12	86%	86%	84%
Germany	12	12	2	86%	87%	89%
Canada	13	11	26	85%	87%	79%
New Zealand	14	16	25	85%	85%	80%
Finland	15	19	17	84%	84%	83%
Austria	16	14	1	83%	86%	90%
Belgium	17	15	6	82%	85%	86%
United Kingdom	18	21	21	82%	83%	82%
Singapore	19	23	39	82%	82%	66%
Spain	20	18	16	81%	85%	83%
Italy	21	20	18	81%	83%	83%
Israel	22	24	24	81%	82%	80%
Slovenia	23	22	22	80%	82%	81%
Korea Rep	24	25	32	80%	80%	78%
United States	25	17	20	78%	85%	82%

Color Scale: 0%-60% | 61%-70% | 71%-80% | 81%-90% | 91%-100%

Quality of Life Index

Top 10 Countries in Quality of Life Sub-Index

Ranking change: ▲ ▬ ▼

Rank	Country	2023	Ranking change	2022	Ranking change	2013
1	Finland	90%	▬ 0	89%	▲ 13	83%
2	Denmark	89%	▬ 0	88%	▲ 1	87%
3	Sweden	88%	▬ 0	87%	▲ 2	87%
4	Norway	87%	▬ 0	87%	▼ 2	89%
5	Iceland	87%	▲ 1	86%	▲ 3	85%
6	Switzerland	85%	▼ 1	86%	▼ 4	95%
7	Austria	83%	▲ 1	82%	▼ 1	86%
8	New Zealand	82%	▲ 1	81%	▼ 3	87%
9	Netherlands	82%	▲ 2	80%	▬ 0	83%
10	Luxembourg	81%	▬ 0	81%	▲ 9	80%

Finland, 13th in the GRI overall, keeps its number one position in the Quality of Life sub-index for the fifth consecutive year. The sub-index is based on performance across five indicators: air quality, biodiversity and habitat, environmental factors, happiness, and water and sanitation.

Consistent leader Finland ranks highly on three indicators – happiness (1st), water & sanitation (1st), and air quality (3rd). Against this, the country slips down the rankings in the biodiversity & habitat and environmental factors indicators. Nordic countries constitute the next three in the rankings, with Denmark, Sweden, and Norway retaining their rankings from last year. Iceland closes out the top five in the sub-index, moving up from 6th in 2022.

Switzerland, Austria, New Zealand, the Netherlands, and Luxembourg complete the sub-index top ten. Switzerland loses one place to 6th, while Austria and New Zealand step up one spot to 7th and 8th, respectively. New Zealand's progress follows improvements in the water & sanitation, environmental factors, and air quality indicators. Meanwhile, the Netherlands breaks into the top ten this year, climbing two places to 9th. The country performs particularly strongly in the water & sanitation indicator, where it ties in first place with several other countries. And there is no change for Luxembourg, which stays at number ten in Quality of Life this year.

The United Kingdom, Germany, Ireland, France, and Australia rank from 11th to 15th in Quality of Life. The United Kingdom records the greatest slide down the sub-index rankings as it exits the top ten and falls from 7th last year to 11th. The country also loses it top five placement for the biodiversity and habitat indicator, plunging from 4th in 2022 to 15th. Meanwhile, Germany and Ireland swap rankings, with Germany rising one spot to 12th and Ireland slipping one place to 13th. And France and Australia retain their positions, in 14th and 15th place, respectively. France enters the top ten for the air quality indicator, stepping up one spot from 11th in 2022.

The countries lying 16th to 20th in the sub-index rankings are Belgium, Canada, Israel, Spain, and Italy. Belgium and Canada swap places, with Belgium improving one spot to 16th and Canada slipping one place to 17th. Israel, Spain, and Italy keep their 2022 rankings, despite all increasing their sub-index score by at least a percentage point. Israel's standout performance comes in the happiness indicator, where it breaks into the top five after climbing up the rankings from 9th to 4th.

Rounding out the top 25 countries are the United States, Estonia, Slovenia, Lithuania, and the Czech Republic. The

United States stays in 21st place, while Estonia and Slovenia swap positions in 22nd and 23rd, respectively. Lithuania ascends three places up the rankings to 24th and increases its sub-index score by six percentage points. And the Czech Republic closes out the top 25, slipping one place from 24th, but posting a slightly improved sub-index score.

Top 25 Countries in Quality of Life Sub-Index	Ranking			Score		
	2023	2022	2013	2023	2022	2013
Finland	1	1	14	90%	89%	83%
Denmark	2	2	3	89%	88%	87%
Sweden	3	3	5	88%	87%	87%
Norway	4	4	2	87%	87%	89%
Iceland	5	6	9	87%	86%	85%
Switzerland	6	5	1	85%	86%	95%
Austria	7	8	7	83%	82%	86%
New Zealand	8	9	6	82%	81%	87%
Netherlands	9	11	11	82%	80%	83%
Luxembourg	10	10	19	81%	81%	80%
United Kingdom	11	7	4	80%	82%	87%
Germany	12	13	10	80%	80%	85%
Ireland	13	12	24	79%	80%	78%
France	14	14	8	79%	78%	85%
Australia	15	15	15	79%	77%	82%
Belgium	16	17	18	76%	74%	81%
Canada	17	16	12	76%	74%	83%
Israel	18	18	17	76%	74%	81%
Spain	19	19	23	75%	74%	79%
Italy	20	20	13	73%	72%	83%
United States	21	21	20	72%	72%	80%
Estonia	22	23	39	72%	68%	59%
Slovenia	23	22	30	71%	69%	73%
Lithuania	24	27	35	70%	64%	64%
Czech Republic	25	24	26	70%	68%	76%

Color Scale: 0%-60% | 61%-70% | 71%-80% | 81%-90% | 91%-100%

Spotlight

Crisis as a catalyst: Russian invasion brings new urgency to energy transition

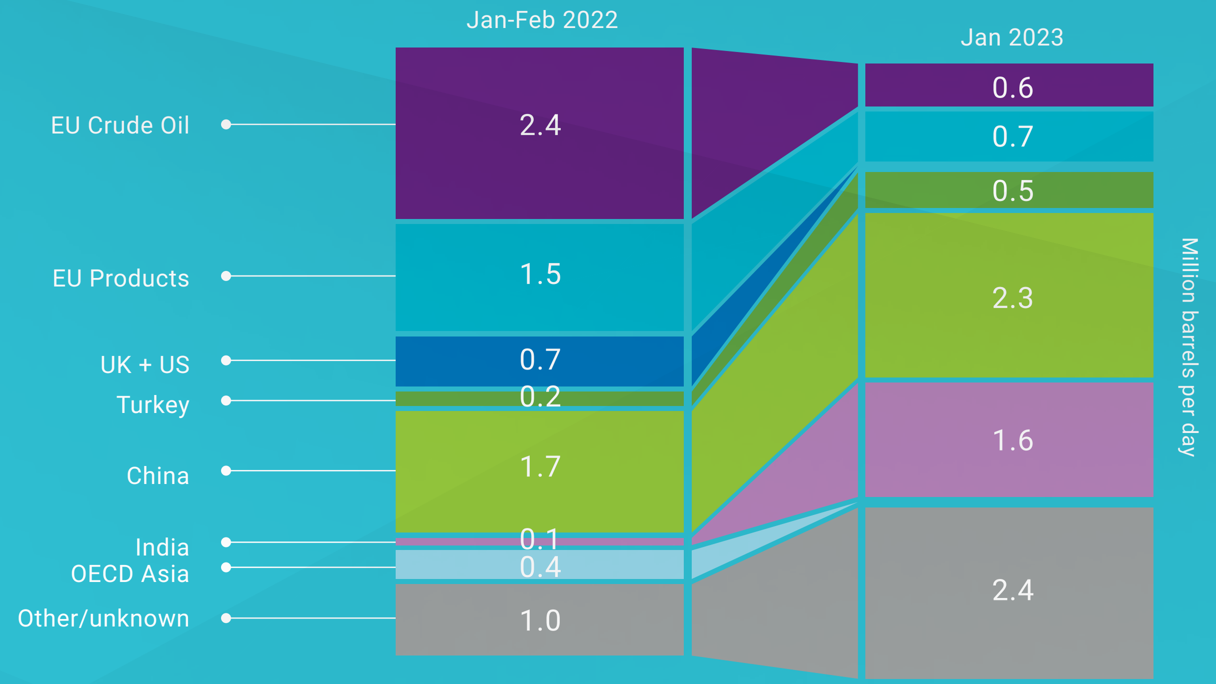
The Russian invasion of Ukraine in early 2022 has prompted a fundamental reshaping of the global energy landscape, with far-reaching implications that will influence society for years to come. This crisis has exposed the vulnerabilities of relying heavily on fossil fuels, highlighting the urgent need for both the diversification of energy sources and energy security. Countries worldwide are putting fresh emphasis on the need to reduce their reliance on imported fossil fuels and embrace cleaner and more sustainable alternatives.

Russia, one of the world's largest exporters of fossil fuels, has traditionally played a significant role in supplying energy to Europe. In addition to fossil fuels, Russia's state-owned Rosatom is the main supplier of critical components for nuclear fuel[1]. While the West has imposed sanctions on various Russian energy sources in response to the invasion, nuclear fuel remains an exception as the United States and some European countries expand their nuclear capacity to aid in the shift from fossil fuels. Prior to the invasion, Europe, the US and UK consumed more than half of Russia's total oil exports; this figure has fallen to less than 20% as of January 2023 as Turkey, China, and India have stepped in.

Amid the Russo-Ukrainian War, the issue of energy security has taken center stage. Russia's decision to cut off supplies of fossil fuels to Europe has had significant implications, causing disruptions in energy markets and threatening the stability of global energy prices. Moreover, the imposition of sanctions on Russian exports has further exacerbated the concerns surrounding energy security.

[1] https://www.wsj.com/articles/nuclear-power-makes-a-comeback-underpinned-by-russian-uranium-24ed8e12

Russia Total Oil Exports



Source: IEA, Argus, Kpler.

Traditionally, one of the main challenges of renewable energy has been its higher cost and lesser reliability compared to fossil fuels. However, recent years have seen a transformation in the renewable energy sector, as the cost of renewable energy has plummeted with increased investment in research and development[2]. This cost reduction, coupled with technological advancements and the ongoing geopolitical conflict, has made renewable energy sources increasingly competitive and viable for meeting energy needs.

In the aftermath of the invasion, a surge in government policies and investment aimed at accelerating the shift to clean energy sources demonstrates how seriously countries are taking the issues of fossil fuel dependence, energy security and climate change. For example, the Inflation Reduction Act in the United States, seen as the most significant climate legislation in the country's history, solidifies the pathway for the energy transition[3]. Renewable energy made up about 21% of the total power generated by the US at the time of the invasion -- by 2050, this is expected to more than double to 44%, fueled by the Inflation Reduction Act[4]. By promoting the use of clean energy sources, the law not only addresses economic issues but also contributes to reducing greenhouse gas emissions and enhancing energy security in a post-invasion world. It signifies a comprehensive approach to building a resilient and sustainable energy system that supports the global fight against climate change.

Germany is a leading example of how to encourage the shift to renewable energies, and the Russian invasion of Ukraine has only strengthened its resolve. With a strong commitment to reducing greenhouse gas emissions, Germany's 'Energiewende' strategy has significantly increased the share of renewable energy sources in its energy mix. The country has implemented laws such as the Renewable Energy Act (EEG), which offers attractive incentives for renewable energy generation[5]. The EEG 2023, an amendment to the original Renewable Energy Act in 2021, marks the most significant energy legislation

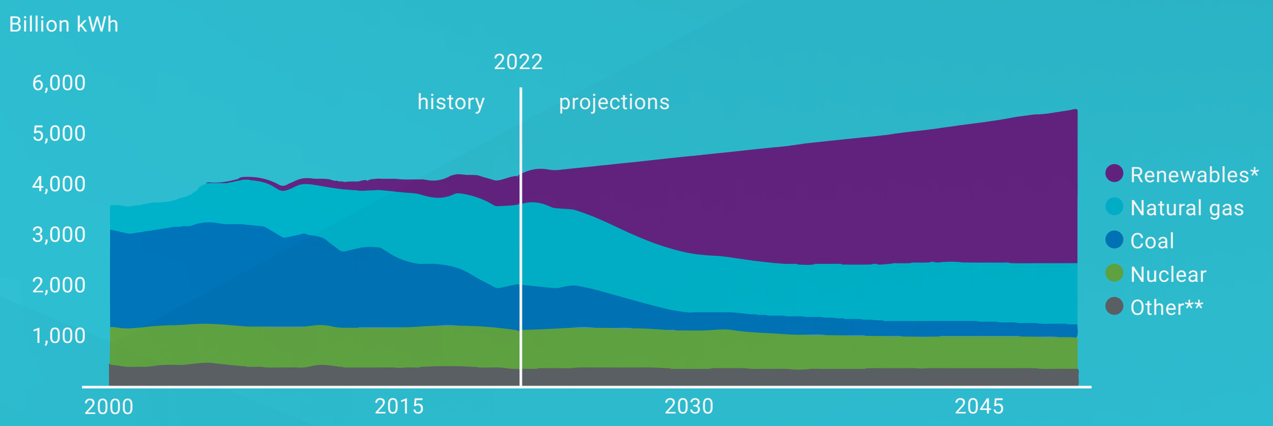
[2] https://www.forbes.com/sites/christinero/2022/09/14/renewable-energy-costs-have-dropped-much-faster-than-expected-but-theres-a-catch/?sh=41dee9cf3164
[3] https://www.forbes.com/sites/energyinnovation/2022/08/02/the-inflation-reduction-act-is-the-most-important-climate-action-in-us-history/?sh=325bff52434d
[4] https://www.eia.gov/todayinenergy/detail.php?id=51698#
[5] https://www.cleanenergywire.org/factsheets/germanys-2022-renewables-and-energy-reforms

amendment in decades, propelling efforts toward climate neutrality, boosting the integration of renewable energy sources in electricity consumption and aiming for renewables to reach an impressive 80 percent of their overall energy mix by the year 2030[6]. Germany has shepherded remarkable progress in deploying wind and solar power, leading to environmental benefits, job creation, and economic growth. The German government has showcased that prioritizing clean energy and supporting sustainable development is powerful not only for a country's economy, but geopolitically as well.

The momentum behind clean energy policies since the invasion of Ukraine emphasizes the growing recognition of sustainable practices and the urgent need to reduce greenhouse gas emissions. Through increased investments, research, and supportive policies, governments are paving the way for a future powered by clean and renewable energy sources.

The commitment to the energy transition extends beyond individual countries. International collaborations and agreements have been forged to promote the sharing of best practices, technology transfer and joint research efforts. These collaborations foster global cooperation in tackling climate change and provide a platform for countries to learn from other's experiences and successes.

U.S. net electricity generation by fuel



*Includes wind & solar
**Includes petroleum, conventional hydroelectric power, geothermal, wood and other biomass, pump storage, non-biogenic municipal waste in the electric power sector, refinery gas, still gas, batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

Source: EIA, Annual Energy Outlook 2023, AEO2023 Reference Case

One notable international partnership is the North Sea collaboration. Countries in the North Sea region, including the Netherlands, Germany, Denmark, Norway, and Belgium, have joined forces to leverage their collective strengths and resources in the development of offshore wind energy[7]. Through this collaboration, they aim to establish a robust offshore wind industry, harmonize regulations, and promote the overall integration of renewable energy into their respective energy systems. Through concerted efforts and international collaborations, the world is witnessing a significant shift towards a sustainable energy future; one that will foster a cleaner, more secure, and prosperous world for generations to come.

Retirees are not immune to the consequences of these shifts; countries that embrace clean energy will foster a healthier environment, and while there may be some financial impacts on retiree portfolios (e.g., stranded assets), populations at large are likely to benefit financially in the long term, as energy innovation and sustainability power the global economy of the future.

[6] https://www.bundesregierung.de/breg-de/themen/klimaschutz/amendment-of-the-renewables-act-2060448
[7] https://www.politico.eu/article/north-sea-global-power-plant-clean-energy-renewable-green-deal-climate-crisis/

The Top 25: Year-on-Year Trends

The list of countries in the top 25 has remained the same for four consecutive years.

Consistent performers Norway, Switzerland, Iceland, and Ireland remain in the top four this year, while the Luxembourg replaces Australia in fifth. The Netherlands also steps up two spots into 6th, followed by Australia in 7th. New Zealand slips two rankings to 8th, while Germany enters the top ten after climbing from 11th last year to 9th. And Denmark loses one place to complete the top ten in this year's GRI. Switzerland (2nd) and Ireland (4th) maintain their rankings for the fourth consecutive year, while New Zealand and Denmark both see ranking changes for the first time in four years.

Austria and Canada both ascend three places to 11th and 12th, respectively. And while Finland and Sweden slide one spot to 13th and 14th, respectively. Slovenia powers six places up the rankings to 15th. The United Kingdom also moves up the table, from 19th to 16th. But Israel inches down to 17th from 16th, while the Czech Republic leaves the top ten by plunging eight places to 18th. Meanwhile, Belgium improves one place to 19th and the United States slips from 18th to close out the top twenty countries in the GRI. Underlining the static nature of this group, only two countries in the top 25 — Slovenia and the Czech Republic — see their rankings change by more than five places.

Elsewhere, South Korea descends from 17th to 21st, while Malta and France both edge up one place in the rankings, finishing 22nd and 23rd respectively. Japan drops two places to 24th from 22nd, while Estonia closes out the top 25 for the second year in a row.

The only countries in the top 25 to experience no change in ranking are the first four (Norway, Switzerland, Iceland, and Ireland) and Estonia in 25th.

Over the past decade, there have been some noteworthy swings in the top 25. Ireland has seen the largest change, leaping 21 places from 25th in 2013 to fourth this year. Iceland has also improved significantly, moving from 14th ten years ago to third. Meanwhile, Sweden and France have seen large swings in the opposite direction, moving from 7th and 15th in 2013 to 15th and 23rd this year, respectively.

The common drivers of performance among the top 25 are higher interest rates, as well as improvements in employment levels and in environmental progress. As economies rebounded from the global pandemic, employment increased strongly, but so did inflation which forced central banks to hike rates to maintain stability. Progress on the environment has also played a crucial role in driving positive change in some countries, as they adopt sustainable practices and invest in clean energy initiatives, especially in the wake of the Russian invasion of Ukraine.

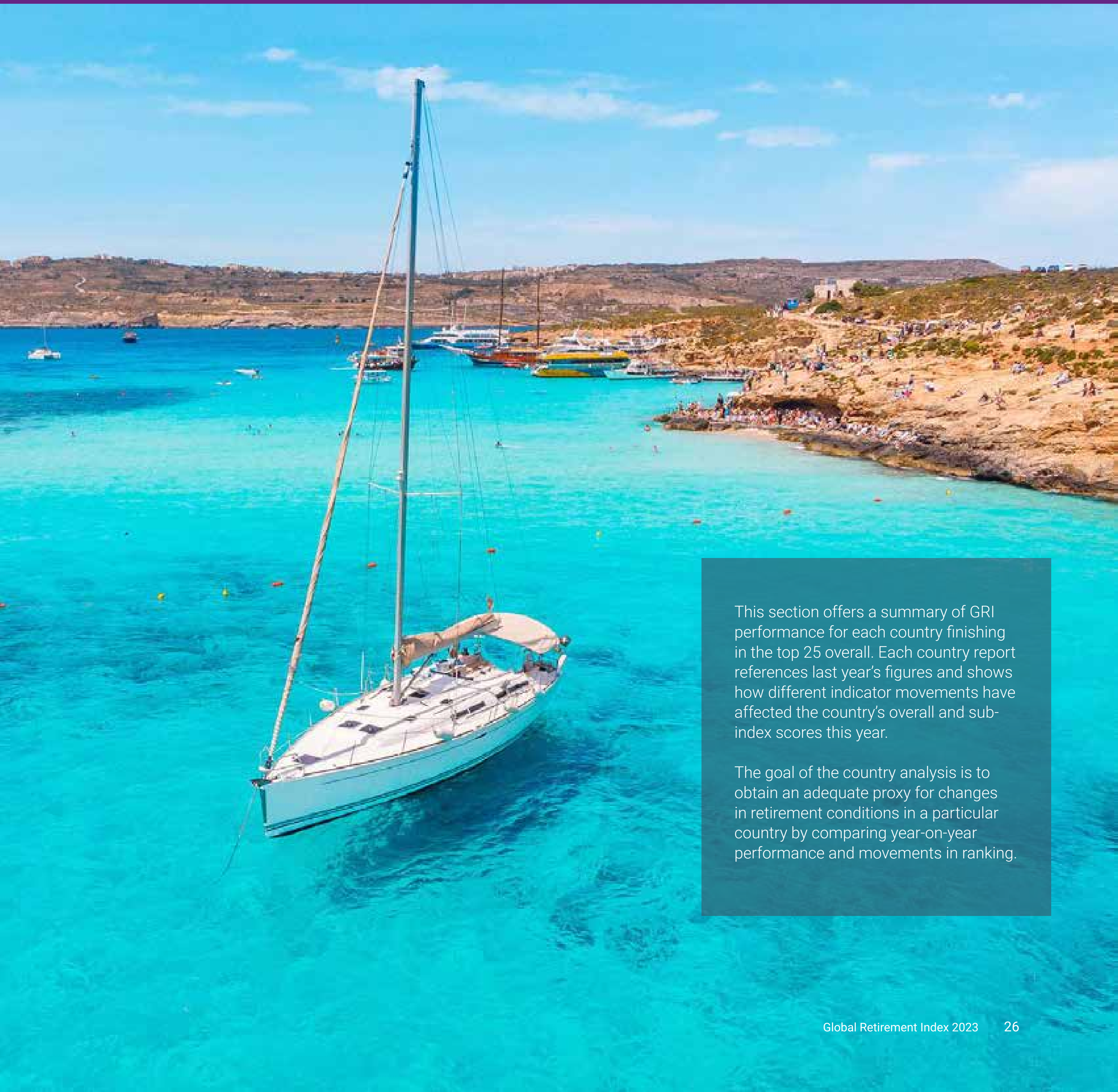
Top 25 Countries in 2022 GRI

Country	Ranking					Trend in Ranking (2023-2013)	Score		
	2023		2022		2013		2023	2022	2013
Norway	1	▬	1	▬	1		83%	81%	87%
Switzerland	2	▬	2	▬	2		82%	80%	84%
Iceland	3	▬	3	▲	14		81%	79%	76%
Ireland	4	▬	4	▲	25		80%	76%	70%
Luxembourg	5	▲	7	▼	3		79%	75%	81%
Netherlands	6	▲	8	▲	11		79%	75%	76%
Australia	7	▼	5	▬	5		78%	75%	79%
New Zealand	8	▼	6	▲	10		77%	75%	77%
Germany	9	▲	11	▼	6		76%	72%	78%
Denmark	10	▼	9	▼	8		76%	74%	78%
Austria	11	▲	14	▼	4		75%	71%	80%
Canada	12	▲	15	▼	13		74%	71%	76%
Finland	13	▼	12	▼	9		74%	71%	78%
Sweden	14	▼	13	▼	7		74%	71%	78%
Slovenia	15	▲	21	▼	19		73%	69%	72%
United Kingdom	16	▲	19	▼	18		73%	69%	73%
Israel	17	▼	16	▲	22		72%	70%	72%
Czech Republic	18	▼	10	▲	16		72%	73%	75%
Belgium	19	▲	20	▼	12		72%	69%	76%
United States	20	▼	18	▲	20		71%	69%	72%
Korea Rep	21	▼	17	▬	17		70%	70%	74%
Malta	22	▲	23	▲	26		69%	68%	69%
France	23	▲	24	▼	15		69%	66%	75%
Japan	24	▼	22	▲	27		68%	69%	69%
Estonia	25	▬	25	▲	31		67%	66%	66%

Changes in 2023: ▲ Increase ▬ Consistent ▼ Decrease

Score Scale: 51%-60% 61%-70% 71%-80% 81%-100%

Country Reports



This section offers a summary of GRI performance for each country finishing in the top 25 overall. Each country report references last year's figures and shows how different indicator movements have affected the country's overall and sub-index scores this year.

The goal of the country analysis is to obtain an adequate proxy for changes in retirement conditions in a particular country by comparing year-on-year performance and movements in ranking.

1. Norway

Norway continues to lead the GRI, retaining first place in the rankings with an overall score of 83%. The country takes top spot in the Material Wellbeing sub-index, edging up from second last year. This is driven by a sizeable improvement in the unemployment indicator in response to the country's rate of unemployment dropping to a near-decade low. Norway also records a higher score in income per capita.

The country drops one spot in the Finances in Retirement sub-index to 9th, despite an increase in its score from 69% to 70%. This is primarily due to an increase in the bank nonperforming loans indicator, placing just outside the top five for this indicator (6th). Against this, Norway's inflation rate remains stubbornly elevated at its highest level in decades but jumps in ranking from 35th in the previous year to 14th this year.

Norway keeps hold of its top ranking in the Health sub-index, improving by one percentage point. This results from a slight rise in life expectancy. The country avoids recording an increase in mortality, despite the lingering impact of the pandemic, mainly because of high vaccination rates within its population.

While Norway maintains its score (87%) and ranking (4th) in the Quality of Life sub-index, it sits at the top of the table for the water and sanitation indicator, up from 5th last year. This is an area in which the country has achieved longstanding success. The United Nations notes how Norway has improved the way it disinfects and filters drinking water at treatment plants over the last three decades. The country has also increased its commitment to protecting those areas vital for water-related ecosystems.

1	NORWAY

RANKING			SCORE		
2023	2022	2013	2023	2022	2013
1	1	1	83%	81%	87%

SUB-INDEX AND INDICATOR SCORES	2023	CHANGES	2022	CHANGES	2013
HEALTH	92%	▲	91%	▲	87%
QUALITY OF LIFE	87%	–	87%	▼	89%
MATERIAL WELLBEING	84%	▲	79%	▼	98%
FINANCES IN RETIREMENT	70%	▲	69%	▼	74%
Old-Age Dependency	36%	▼	39%	▼	47%
Bank Non-Performing Loans	75%	▲	68%	▲	64%
Inflation	65%	▼	92%	▼	100%
Interest Rates	75%	▲	70%	▲	41%
Tax Pressure	14%	▲	8%		
Government Indebtedness	66%	▼	69%	▲	42%
Governance	92%	▼	93%	–	93%

2. Switzerland

High-flying Switzerland retains second place in the GRI and improves its score from 80% to 82% on the back of a stronger set of Material Wellbeing results.

Switzerland jumps up eight places in Material Wellbeing to 6th and sees its score increase from 69% to 79%. A key factor driving the improvement is the unemployment indicator, where the country surges 20 places up the table to grab the top spot. Switzerland's unemployment rate, which dropped to 2.1% in February 2023, stands at a two-decade low. However, this is exacerbating a historic labor shortage caused by an ageing population and economic recovery. Elsewhere, the country records small declines in income equality (20th to 22nd) and income per capita (4th to 5th).

The country's best performance is in Finances in Retirement where it tops the table with an improved ranking (2nd to 1st) and score (74% to 75%). Switzerland makes gains in governance (6th to 4th), government indebtedness (10th to 9th), and tax pressure (14th to 13th). But the standout area is inflation, where it finishes second. Inflation in Switzerland, which fell to 2.9% in March 2023, is lower than other advanced economies. This can be attributed to the strength of its currency and successive interest rate rises. However, the Swiss base rate (1.5% in March 2023) remains lower than the ECB's deposit rate (3% in March 2023). This helps explain the country's steep fall in the interest rate indicator (8th to 43rd).

Switzerland manages a top five finish in Health (5th), despite slipping one place. The steady performance is reflected in static indicator rankings for health expenditure per capita (2nd) and insured health expenditure (30th).

Quality of Life also sees steady year on year performance (5th to 6th). A particular positive is water and sanitation, where Switzerland moves up one place to clinch top position. Despite an increase in score in the environmental factors indicator, Switzerland slips in ranking from 1st to 2nd.

2	SWITZERLAND		

RANKING 2023	RANKING 2022	RANKING 2013	SCORE 2023	SCORE 2022	SCORE 2013
2	2	2	82%	80%	84%

SUB-INDEX AND INDICATOR SCORES	2023	CHANGES	2022	CHANGES	2013
HEALTH	88%	▼	90%	▲	86%
QUALITY OF LIFE	85%	▼	86%	▼	95%
MATERIAL WELLBEING	79%	▲	69%	▼	87%
FINANCES IN RETIREMENT	75%	▲	74%	▲	70%
Old-Age Dependency	34%	–	34%	▼	41%
Bank Non-Performing Loans	70%	▼	73%	▼	83%
Inflation	88%	▼	100%	–	100%
Interest Rates	63%	▼	74%	▲	64%
Tax Pressure	39%	▲	25%	▲	12%
Government Indebtedness	67%	▼	68%	▲	43%
Governance	92%	–	92%	▼	93%

3. Iceland

Iceland retains its third-place finish in the GRI with an improved overall score of 81%. This is fueled by a better performance in the Material Wellbeing sub-index following a near 20-point jump in the unemployment indicator. The unemployment rate in Iceland has remained relatively stable and is expected to decrease going forward. As a result, Iceland moves up to third in the sub-index rankings.

The Quality of Life sub-index score increases slightly (from 86% to 87%), driven by an improvement in the water and sanitation indicator where Iceland moves from 6th to first. It also makes gains in the environmental factors indicator. These impressive results reflect how the country is a global leader in its use of renewable and clean energy and implementation of geothermal regulations and guidelines.

Iceland jumps into the top five (4th) in the Health sub-index with the same score as last year (88%). The country's average life expectancy improves due to Icelanders being among those with the highest life expectancy in Europe. Experts attribute this to the country's dedication to a healthy lifestyle and diet, along with low levels of pollution.

Iceland's Finances in Retirement sub-index score also remains the same as last year, despite increases in the old-age dependency, bank nonperforming loans and tax pressure indicators. The country also sees an improvement in the interest rate indicator score, maintaining a spot in the top ten (9th) for this indicator.

3	ICELAND				
RANKING			SCORE		
2023	2022	2013	2023	2022	2013
3	3	14	81%	79%	76%

SUB-INDEX AND INDICATOR SCORES	SCORES 2023	CHANGES	2022	CHANGES	2013
HEALTH	88%	–	88%	▲	85%
QUALITY OF LIFE	87%	▲	86%	▲	85%
MATERIAL WELLBEING	83%	▲	77%	▼	85%
FINANCES IN RETIREMENT	68%	–	68%	▲	54%
Old-Age Dependency	50%	▲	45%	▼	61%
Bank Non-Performing Loans	49%	▲	45%	▲	1%
Inflation	52%	▼	90%	▲	52%
Interest Rates	84%	▲	79%	▼	82%
Tax Pressure	19%	▲	13%	▲	7%
Government Indebtedness	46%	▲	44%	▲	23%
Governance	91%	▲	90%	▲	89%

4. Ireland

Ireland stays in fourth place in the GRI rankings and sees its overall score climb from 76% to 80%. The higher score comes on the back of gains in the Material Wellbeing and Finances sub-indices. A better Material Wellbeing score stems from a significant improvement in the unemployment and income equality indicators. The fall in the country's unemployment rate continues the trend of a sustained decline, reflecting a strong labor market as Ireland's economy stages a post-pandemic bounce back.

The bright economic outlook is translating into an improved showing in Finances in Retirement, where Ireland makes its way into the top ten (6th) with an improved score. This is powered by gains in the interest rate, tax pressure, bank nonperforming loans and government indebtedness indicators. Ireland's economic growth is ahead of the eurozone average, driven by consumer and business spending.

Ireland sees its Quality of Life sub-index score fall marginally following declines in the biodiversity and habitat and happiness indicators. But biodiversity is a cause that Ireland is making a stand on, with the world's first citizens' assembly on biodiversity loss recently taking place in Dublin. Ireland has also seen demonstrators take to the streets to call for measures to protect the country's biodiversity.

Meanwhile, Ireland's Health sub-index score slips slightly owing to the impact of the pandemic on life expectancy.

4	IRELAND				
RANKING			SCORE		
2023	2022	2013	2023	2022	2013
4	4	25	80%	76%	70%

SUB-INDEX AND INDICATOR SCORES	2023	CHANGES	2022	CHANGES	2013
HEALTH	88%	▼	89%	▲	82%
QUALITY OF LIFE	79%	▼	80%	▲	78%
MATERIAL WELLBEING	79%	▲	67%	▲	64%
FINANCES IN RETIREMENT	73%	▲	70%	▲	60%
Old-Age Dependency	49%	▬	49%	▼	65%
Bank Non-Performing Loans	44%	▲	38%	▲	5%
Inflation	57%	▼	100%	▬	100%
Interest Rates	74%	▲	43%	▼	77%
Tax Pressure	62%	▲	37%	▲	14%
Government Indebtedness	57%	▲	55%	▲	21%
Governance	89%	▬	89%	▬	89%

5. Luxembourg

Luxembourg closes out the top five this year (5th), increasing its overall score to 79%. This is based on a substantial improvement in Finances in Retirement, where the country increases its score to 73% and closes out the top five (5th). The rise is due to gains in Luxembourg's interest rate and tax pressure indicators. These positive results come as the country's government recently proposed new tax measures in an effort to curb the inflationary pressures on households and businesses.

The Material Wellbeing sub-index score increases slightly, and its ranking remains inside the top ten (10th) as the income equality and unemployment indicators improve from last year. While the unemployment rate in Luxembourg has been holding steady, the jobs market is cooling with job creation numbers slowing. The number of those seeking jobs has also increased, some of which are Ukrainian refugees fleeing from the Russia-Ukraine conflict and now living under provisional protection status.

The country's score in the Health sub-index decreases, driven by a decline in average life expectancy. This is attributable to the sudden increase in mortality caused by the global pandemic.

Luxembourg's Quality of Life sub-index score remains the same and it again ranks in tenth place, but it makes a sizeable gain in the water and sanitation indicator, moving into the top ten (10th). This comes after a new law was passed at the end of last year to improve the quality of tap water and make it safer for citizens to drink.

5	LUXEMBOURG				
RANKING			SCORE		
2023	2022	2013	2023	2022	2013
5	7	3	79%	75%	81%

SUB-INDEX AND INDICATOR SCORES	SCORES 2023	CHANGES	2022	CHANGES	2013
HEALTH	89%	▼	91%	▲	86%
QUALITY OF LIFE	81%	▬	81%	▲	80%
MATERIAL WELLBEING	73%	▲	72%	▼	90%
FINANCES IN RETIREMENT	73%	▲	59%	▼	68%
Old-Age Dependency	53%	▼	55%	▬	55%
Bank Non-Performing Loans	58%	▼	69%	▼	100%
Inflation	82%	▼	100%	▲	64%
Interest Rates	75%	▲	1%		
Tax Pressure	14%	▲	9%	▲	7%
Government Indebtedness	87%	▼	88%	▲	66%
Governance	92%	▬	92%	▬	92%

6. Netherlands

The Netherlands lands just outside the top five this year in 6th. The country moves up two places in this year's GRI rankings from 8th in 2022, based on a solid all-round performance across the four sub-indices.

In particular, the Netherlands rises ten spots in the Finances in Retirement sub-index to 16th and two spots to 9th in the Quality of Life sub-index. And while it slips slightly in Health and Material Wellbeing, it still sits in the top ten for these sub-indices.

On the Finances in Retirement sub-index, the Netherlands' elevation comes despite falls in its ranking for inflation and interest rates. On inflation, the country tumbles from one of the leaders to 21st. This is due to a spike in the Dutch inflation rate, which peaked at 15.4% in the fourth quarter of 2022. Meanwhile, the Netherlands saw its ranking on interest rates slide from 26th to 39th. Elsewhere, there is little or no change in rankings for old age dependency, government indebtedness, tax pressure and governance.

The Netherlands rises from 11th to 9th in the Quality of Life sub-index. Within this, on the water and sanitation indicator, it moves from 3rd to first. It remains highly placed on the Material Wellbeing sub-index, although its ranking dips from 3rd to 5th, despite improving on income equality. It falls outside of the top ten for unemployment this year, placing in 11th from 8th in the previous year.

Overall, the Netherlands, like many countries, is facing the headwinds of higher inflation and interest rates, but its underlying economic fundamentals remain strong. These fundamentals, along with the strengths of the country's pension and healthcare systems, look set to keep the Netherlands well-placed in the GRI.

6	NETHERLANDS	

RANKING			SCORE		
2023	2022	2013	2023	2022	2013
6	8	11	79%	75%	76%

SUB-INDEX AND INDICATOR SCORES	SCORES 2023	CHANGES ▲ ▬ ▼	2022		2013
HEALTH	87%	▼	89%	▲	86%
QUALITY OF LIFE	82%	▲	80%	▼	83%
MATERIAL WELLBEING	82%	▲	78%	▼	86%
FINANCES IN RETIREMENT	66%	▲	56%	▲	55%
Old-Age Dependency	30%	▲	29%	▼	44%
Bank Non-Performing Loans	46%	▼	53%	▲	49%
Inflation	58%	▼	100%	▲	85%
Interest Rates	74%	▲	1%	▬	1%
Tax Pressure	12%	▲	9%	▲	6%
Government Indebtedness	59%	▬	59%	▲	34%
Governance	91%	▬	91%	▼	92%

7. Australia

Australia comes 7th in the 2023 GRI, ranking in the top ten for the ninth consecutive year. Its ranking drops two spots from 5th last year despite a higher overall score (78% versus 75% in 2022). The strong overall finish for Australia is driven primarily by top ten rankings in both the Finances in Retirement (3rd) and Health (9th) sub-indices.

Australia rises from 4th to 3rd in Finances in Retirement this year as its score edges up one point to 73%. The most significant factor behind the improved ranking comes from bank nonperforming loans, where Australia rises from 10th to 5th this year. Against this, falls in both the inflation (1st to 20th) and interest rate (11th to 20th) rankings result from wider macroeconomic forces impacting countries around the globe. But efforts are being made to shore up the country's finances, with the Australian Prudential Regulation Authority (APRA) introducing stricter lending guidelines.

Material Wellbeing is the sub-index in which Australia achieves the biggest jump this year, climbing from 19th to 13th in the rankings. The main driver of improvement comes from unemployment where Australia rises from 19th to 14th due to unemployment falling to 3.5% in March 2023.

Australia's rank (9th) and score (88%) in the Health sub-index remains consistent with last year's results. This comes despite a rise in the rankings for life expectancy (to 5th from 9th) as strong pandemic controls have kept death rates relatively low.

Australia remains 15th in the Quality of Life sub-index rankings for the third consecutive year. The country again ranks 6th for air quality and remains in 25th spot for water and sanitation despite a rise in score from 75% to 87%.

7	AUSTRALIA

	RANKING			SCORE		
	2023	2022	2013	2023	2022	2013
	7	5	5	78%	75%	79%

SUB-INDEX AND INDICATOR SCORES	2023	CHANGES	2022	CHANGES	2013
HEALTH	88%	▬	88%	▲	84%
QUALITY OF LIFE	79%	▲	77%	▼	82%
MATERIAL WELLBEING	72%	▲	66%	▼	77%
FINANCES IN RETIREMENT	73%	▲	72%	▲	71%
Old-Age Dependency	42%	▼	43%	▼	54%
Bank Non-Performing Loans	77%	▲	63%	▲	62%
Inflation	59%	▼	100%	▲	64%
Interest Rates	77%	▲	73%	▲	68%
Tax Pressure	38%	▲	25%	▲	22%
Government Indebtedness	55%	▲	53%	▼	63%
Governance	90%	▬	90%	▼	91%

8. New Zealand

New Zealand stays in the GRI top ten this year but falls from 6th to 8th in the rankings despite an increase in overall score from 75% to 77%. The country finishes with higher rankings in almost all four sub-indices and achieves top ten placement in Finances in Retirement and Quality of Life (both 8th).

The country's Finances in Retirement sub-index ranking slips from 6th last year to 8th, despite an increase in the score for the sub-index. The improvement in score comes from a sharp increase in the interest rate indicator, jumping from 24th to 12th, while old-age dependency improves slightly this year (16th versus 18th in 2022).

New Zealand ranks 8th in the Quality of Life sub-index, up from 9th last year. This is driven primarily by strong performances in air quality (4th), happiness (10th), and environmental factors (11th). High scores for GDP per capita and social support are the key factors driving New Zealand's strong happiness ranking.

In the Health sub-index, New Zealand climbs two spots from 16th to 14th. The higher ranking comes as life expectancy rises six places following a strong national response to the pandemic which drove better outcomes relative to other countries.

While New Zealand's 17th place ranking for Material Wellbeing is the lowest of the four sub-indices, this nevertheless represents an improvement from 20th last year. The country again ranks 10th for unemployment but sees a stronger score this year (91% versus 80% last year) as unemployment rates continue to recover from the effects of the pandemic.

8	NEW ZEALAND

RANKING 2023	RANKING 2022	RANKING 2013	SCORE 2023	SCORE 2022	SCORE 2013
8	6	10	77%	75%	77%

SUB-INDEX AND INDICATOR SCORES	2023	Change	2022	Change	2013
HEALTH	85%	–	85%	▲	80%
QUALITY OF LIFE	82%	▲	81%	▼	87%
MATERIAL WELLBEING	70%	▲	64%	▼	75%
FINANCES IN RETIREMENT	72%	▲	71%	▲	69%
Old-Age Dependency	44%	▲	42%	▼	55%
Bank Non-Performing Loans			76%	▲	64%
Inflation	61%	▼	100%	▲	52%
Interest Rates	80%	▲	37%	▼	77%
Tax Pressure	27%	▲	19%	▲	11%
Government Indebtedness	60%	▼	69%	▲	50%
Governance	92%	▼	93%	–	93%

9. Germany

Germany moves up two spots to ninth place in this year's GRI rankings, as its overall score increases from 72% to 76% — a reflection of its economic resilience compared to many other nations.

This is shown by a strong relative performance on the Finances in Retirement sub-index this year, where it rises from 30th to 20th. Germany falls from first to 24th on inflation and from 26th to 41st on interest rates. However, these declines were not as precipitous as seen elsewhere, evidence that Germany is riding out a turbulent economic period relatively well.

In addition, its robust economic and social model helped it rise to 8th on the Material Wellbeing sub-index, up from 11th. Like many European countries, Germany saw sharp rises in energy prices following Russia's invasion of Ukraine, at a time growth was slowing. But Germany's exports held up, as post-Covid supply chain issues eased and China opened up after the pandemic, supporting German export businesses. Generous government support for households and businesses also lessened the impact of the slowdown.

On the Health sub-index, Germany remains 12th globally, thanks to high levels of health expenditure and life expectancy increasing from 27th to 25th. On the latter, while the Covid-19 pandemic led to life expectancy scores falling from 77% in 2022 to 75% in 2023, this is a lower relative fall than, for instance, Italy and France, which experienced steeper declines in life expectancy due to the pandemic.

Finally, Germany moves up one spot in Quality of Life to 12th, after placing first in the biodiversity and habitat indicator, up from 3rd. The country also ranks among the top ten for the water and sanitation indicator.

9	GERMANY

RANKING			SCORE		
2023	2022	2013	2023	2022	2013
9	11	6	76%	72%	78%

SUB-INDEX AND INDICATOR SCORES	2023	Change	2022	Change	2013
HEALTH	86%	▼	87%	▼	89%
QUALITY OF LIFE	80%	–	80%	▼	85%
MATERIAL WELLBEING	77%	▲	71%	▼	82%
FINANCES IN RETIREMENT	64%	▲	55%	▼	61%
Old-Age Dependency	23%	▼	25%	▼	28%
Bank Non-Performing Loans	56%	▼	62%	▲	50%
Inflation	56%	▼	100%	▲	85%
Interest Rates	72%	▲	1%	▼	52%
Tax Pressure	14%	▲	9%	▲	7%
Government Indebtedness	49%	▼	50%	▲	28%
Governance	89%	–	89%	–	89%

10. Denmark

Denmark increases its overall score to 76% in this year's GRI and stays in the top ten (10th) despite falling in rank from 9th. The higher score is based on gains in the Finances in Retirement and Quality of Life sub-indices. The country's Finances in Retirement sub-index score increases six percentage points, driven by improvements in interest rates, alongside government indebtedness and governance, both of which rank in the top five.

The country maintains second place in Quality of Life and sees its score increase from last year following improvements in water and sanitation, environmental factors, and air quality. While Denmark continues its efforts to reduce air pollution, an improved score in environmental factors sees the country climb from 6th to 3rd in this indicator. This is testament to Denmark's progress in renewable energy, which accounts for 60% of the country's electricity. Meanwhile, Denmark stays in second place for the happiness indicator, despite a one percentage point score decline.

Denmark's Material Wellbeing sub-index score slips to 72%, resulting in the country falling out of the top ten (12th). This is based on declines in the income per capita and unemployment indicators. The unemployment rate in Denmark continues to increase, albeit at a slower pace. The country also registered a record high job turnover rate in 2022.

The Health sub-index score remains at 86%, with Denmark finishing just outside the top ten (11th). Denmark, alongside Norway, was one of the few countries to avoid a reduction in life expectancy due to the pandemic.

10	DENMARK

RANKING			SCORE		
2023	2022	2013	2023	2022	2013
10	9	8	76%	74%	78%

SUB-INDEX AND INDICATOR SCORES	SCORES / CHANGES 2023	2022	2013
HEALTH	86%	86%	84%
QUALITY OF LIFE	89%	88%	87%
MATERIAL WELLBEING	72%	76%	84%
FINANCES IN RETIREMENT	60%	54%	60%
Old-Age Dependency	28%	28%	38%
Bank Non-Performing Loans	56%	58%	43%
Inflation	60%	100%	77%
Interest Rates	73%	1%	66%
Tax Pressure	1%	1%	1%
Government Indebtedness	72%	68%	44%
Governance	93%	92%	93%

11. Austria

Austria's overall score rises from 71% to 75% as it jumps from 14th to 11th in the rankings. The higher overall score primarily results from improvements in the Finances in Retirement and Material Wellbeing sub-indices. Austria's Finances in Retirement score moves from 54% last year to 62%, fueled by higher interest rates and a smaller increase in the tax pressure indicator.

The Material Wellbeing sub-index score rises from 69% to 72%, driven by gains in Austria's unemployment rate. This underscores the country's strong labor market, with the unemployment rate of working age people and those aged above 50 continuing on a downward trend. Against this, there has been a substantial rise in youth unemployment.

Austria's Quality of Life score also increases slightly to 83% this year due to gains in the air quality, biodiversity and habitat, and water and sanitation indicators. This reflects Austria's strong environmental policies, which include the introduction of measures earlier this year to increase the funding and deployment of solar panels. These efforts are paying dividends, with Austria continuing to rank in the top ten for the environmental factors indicator (9th).

Meanwhile, Austria sees its Health sub-index score fall from 86% to 83% as its updated life expectancy now accounts for the pandemic's impact on average lifespan.

11 AUSTRIA

	RANKING			SCORE	
2023	2022	2013	2023	2022	2013
11	14	4	75%	71%	80%

SUB-INDEX AND INDICATOR SCORES	SCORES 2023	CHANGES	2022	CHANGES	2013
HEALTH	83%	▽	86%	▽	90%
QUALITY OF LIFE	83%	△	82%	▽	86%
MATERIAL WELLBEING	72%	△	69%	▽	90%
FINANCES IN RETIREMENT	62%	△	54%	▽	60%
Old-Age Dependency	33%	▽	34%	▽	38%
Bank Non-Performing Loans	48%	▽	52%	▽	53%
Inflation	49%	▽	100%	△	60%
Interest Rates	75%	△	1%	▽	54%
Tax Pressure	7%	△	5%	△	4%
Government Indebtedness	42%	–	42%	△	32%
Governance	88%	▽	89%	▽	90%

12. Canada

Canada manages to improve its overall score from 71% to 74% as it rises three spots to 12th in this year's GRI. This is powered by an eleven-point jump in the Material Wellbeing sub-index score, driven by increases in the unemployment and income equality indicators. Canada's labor market remains strong amid a steadily declining unemployment rate.

The Finances in Retirement score slightly increases by two percentage points, moving Canada into the top ten for this sub-index (10th). The improvement largely stems from the stabilization of Canada's interest rates as the economy recovers from the effects of the pandemic. Further bright spots come from the tax pressure and bank nonperforming loan indicators, both of which slightly increase from last year.

Canada slips one place in the Quality of Life sub-index rankings, but manages to increase its score by two percentage points. Almost all indicators register a better score than last year, with the exception of the happiness indicator. The most-marked improvement comes in water and sanitation, which increases from 77% to 88%. Canada is making great progress in implementing Goal 6 of the UN Sustainable Development Goals (SDGs) which covers clean water and sanitation. Indeed, the country has funded nearly 800 water and wastewater projects since 2021. Other initiatives include making commitments to build and repair water and wastewater infrastructure.

The Health sub-index score declines by two percentage points to 85%. This is due to the decrease in Canada's life expectancy, reflecting the ongoing impact of the pandemic.

12	CANADA

	RANKING			SCORE		
	2023	2022	2013	2023	2022	2013
	12	15	13	74%	71%	76%

SUB-INDEX AND INDICATOR SCORES	SCORES 2023	CHANGES ▲ – ▼	2022		2013
HEALTH	85%	▼	87%	▲	79%
QUALITY OF LIFE	76%	▲	74%	▼	83%
MATERIAL WELLBEING	69%	▲	58%	▼	75%
FINANCES IN RETIREMENT	69%	▲	67%	–	67%
Old-Age Dependency	36%	▼	37%	▼	52%
Bank Non-Performing Loans	88%	▲	85%	▼	90%
Inflation	71%	▼	100%	▲	75%
Interest Rates	75%	▲	47%	▼	66%
Tax Pressure	22%	▲	17%	▲	11%
Government Indebtedness	31%	▲	30%	▲	27%
Governance	90%	–	90%	▼	91%

13. Finland

Finland slips one spot in this year's rankings to 13th, despite its overall score increasing to 74%, from 71%. Within the four sub-indices, Finland drops four spots to 25th for Material Wellbeing, but it either climbs or holds its place in the other sub-indices.

Finland's most substantial increase is in the Finances in Retirement sub-index, up six spots to 25th, which follows an improvement in the country's interest rates, as well as in the tax pressure and governance indicators. Finland takes the lead (1st) in the governance indicator, an improvement from runner-up (2nd) in the previous year.

The Quality of Life sub-index score increases by one percentage point to 90%, with Finland continuing to top the rankings in this sub-index. The environmental factors and water and sanitation indicators improve over the last year, with Finland now first on the latter. Finland is one of many European countries to ramp up its renewable energy transition following Russia's invasion of Ukraine. According to the Finnish Wind Energy Association (FWPA), Finland's wind power capacity has expanded by 75% in 2022, with over 400 new wind turbines. The country also ranks in 1st place in the happiness indicator for the sixth consecutive year.

Although its ranking on the Material Wellbeing sub-index dips this year, Finland's score here increases to 64%, primarily driven by an improvement in the unemployment indicator. Despite a slight improvement, Finland currently suffers from a labor shortage, with the number of job vacancies more than doubling since 2019.

Finland's overall score in the Health sub-index has remained unchanged since last year 84%, which is enough to lift it four spots to 15th, highlighting the country's strong COVID-19 response during the global pandemic.

13 FINLAND

RANKING			SCORE		
2023	2022	2013	2023	2022	2013
13	12	9	74%	71%	78%

SUB-INDEX AND INDICATOR SCORES	SCORES 2023	2022	2013
HEALTH	84%	84%	83%
QUALITY OF LIFE	90%	89%	83%
MATERIAL WELLBEING	64%	63%	82%
FINANCES IN RETIREMENT	63%	55%	65%
Old-Age Dependency	19%	19%	36%
Bank Non-Performing Loans	49%	54%	94%
Inflation	55%	100%	66%
Interest Rates	75%	1%	61%
Tax Pressure	8%	5%	3%
Government Indebtedness	50%	51%	43%
Governance	93%	93%	94%

14. Sweden

Sweden slips one spot to 14th overall in this year's GRI rankings, despite its score increasing to 74%, up from 71%.

Sweden's biggest increase is in the Finances in Retirement sub-index, where it rises nine spots to 18th. Within this sub-index, Sweden remains 3rd on the bank non-performing loans indicator, and it is 6th for government indebtedness, up from 7th. Despite a slight rise on tax pressure, Sweden is among the lowest performing countries for this indicator, 40th, with the personal dividend and capital gains tax rates both at 30%, higher than the OECD average. Sweden also falls steeply on the inflation indicator, from 1st to 34th and on interest rates, from 26th to 42nd. Higher energy prices have been a key factor driving inflation, raising costs throughout the economy.

The Material Wellbeing sub-index score also increases slightly, following an improvement in the unemployment score since the global pandemic, which reflects Sweden's resilient labor market. However, this does not prevent a drop in the ranking to 27th for Material Wellbeing, down from 26th. Sweden stays among the leaders for both income equality (10th) and income per capita (9th).

Sweden also retains 3rd place on the Quality of Life sub-index, based on its rise to 10th spot in the water and sanitation indicator. Sweden has increased its focus on building sustainable water services since 2018, with legislation requiring municipalities to adopt a water services plan, as well as allocating roughly 250 million Swedish krona to advanced treatment technology at wastewater treatment plants between 2018 and 2020.

The Health sub-index score for Sweden slightly decreases over the last year, due to a fall in average life expectancy. This is a lingering effect of the COVID-19 pandemic and it is Sweden's biggest decline since 1944.

14	SWEDEN

RANKING			SCORE		
2023	2022	2013	2023	2022	2013
14	13	7	74%	71%	78%

SUB-INDEX AND INDICATOR SCORES	SCORES 2023	CHANGES ▲ ▬ ▼	2022		2013
HEALTH	88%	▼	90%	▲	83%
QUALITY OF LIFE	88%	▲	87%	▬	87%
MATERIAL WELLBEING	60%	▲	59%	▼	82%
FINANCES IN RETIREMENT	65%	▲	56%	▼	63%
Old-Age Dependency	27%	▲	26%	▼	33%
Bank Non-Performing Loans	86%	▲	82%	▼	86%
Inflation	46%	▼	100%	▬	100%
Interest Rates	72%	▲	1%	▼	72%
Tax Pressure	6%	▲	4%	▲	1%
Government Indebtedness	72%	▬	72%	▲	50%
Governance	91%	▬	91%	▼	93%

15. Slovenia

Slovenia jumps from 21st to 15th place in the overall GRI rankings, the biggest rise of any country in the top 20 this year. This is primarily due to its rise of an impressive nine places, to 19th, in the Finances in Retirement sub-index, as well as a smaller rise in the Material Wellbeing sub-index to 2nd place. On both the Health and Quality of Life sub-indices, Slovenia drops a place to 23rd.

The country's Finances in Retirement sub-index score increases by ten-percentage points, driven by improvements in the score for the interest rates, tax pressure, and government indebtedness indicators.

On the Material Wellbeing sub-index, the country's score increases to 83%, up from 77% in 2022. This is driven by an improvement in the unemployment rate, with Slovenia making it into the top 10 for this indicator (9th). The country's unemployment rate recently dropped to the lowest it has been since Slovenia's independence in 1991. It also has one of the lowest unemployment rates in the EU.

Slovenia's score in the Quality of Life sub-index also slightly increases, largely due to a sharp improvement in the water and sanitation indicator, as well as smaller increases in the air quality and environmental factors indicators. Despite a slight drop in the biodiversity and habitat indicator, Slovenia has the greatest proportion of national area protected under the EU's Natura 2000 network of protected sites. In addition, it is one of the most densely afforested countries in Europe, covering around 54% of its surface area.

The country's Health sub-index decreases slightly, driven by a decline in the life expectancy indicator, reflecting the lasting impact of the COVID-19 pandemic.

15 SLOVENIA

	RANKING			SCORE		
	2023	2022	2013	2023	2022	2013
	15	21	19	73%	69%	72%

SUB-INDEX AND INDICATOR SCORES	SCORES 2023	CHANGES	2022	CHANGES	2013
HEALTH	80%	▼	82%	▲	81%
QUALITY OF LIFE	71%	▲	69%	▼	73%
MATERIAL WELLBEING	83%	▲	77%	▼	81%
FINANCES IN RETIREMENT	61%	▲	51%	▼	58%
Old-Age Dependency	28%	▲	27%	▼	44%
Bank Non-Performing Loans	43%	▼	45%	▲	14%
Inflation	54%	▼	100%	▬	100%
Interest Rates	77%	▲	1%	▼	75%
Tax Pressure	17%	▲	11%	▲	6%
Government Indebtedness	46%	▲	44%	▲	43%
Governance	83%	▬	83%	▬	83%

16. United Kingdom

The UK climbs up three spots to 16th in the GRI, with its overall score rising from 69% to 73%. The improvement is driven by a strong performance in the Finances in Retirement sub-index.

Indeed, the country leaps fourteen places for Finances in Retirement to 15th. This is fueled by a higher ranking (26th to 18th) on the interest rate indicator, after the UK's central bank implemented a series of rate hikes to tame runaway inflation. The country also fares better on the bank nonperforming loans indicator (13th to 11th). These results offset a dramatic slide down the rankings for inflation (1st to 29th). UK consumer price inflation hit a 41-year high of 11.1% in October 2022, but it is expected to come down as energy price increases slow down.

The country records its highest sub-index ranking in Quality of Life (11th), despite falling four places. It finishes lower in air quality (10th to 14th), happiness (17th to 19th) and, most markedly, biodiversity and habitat (4th to 15th). But it holds onto top spot in water and sanitation and stages a marginal improvement in environmental factors (14th to 13th).

In Health, the UK rises three places to 18th but sees its score slip from 83% to 82%. Notably, the country's life expectancy score falls from 79% to 74% amid the lingering impact of COVID-19. In addition, figures from the Office of National Statistics show excess deaths almost tripling following junior doctor strikes in March 2023.

The UK improves its Material Wellbeing score (61% to 65%), gaining one place to 22nd. A better showing for income equality (35th to 34th) is balanced by a decline in unemployment (13th to 15th).

16	UNITED KINGDOM

RANKING 2023	RANKING 2022	RANKING 2013	SCORE 2023	SCORE 2022	SCORE 2013
16	19	18	73%	69%	73%

SUB-INDEX AND INDICATOR SCORES	2023		2022		2013
HEALTH	82%	▼	83%	▲	82%
QUALITY OF LIFE	80%	▼	82%	▼	87%
MATERIAL WELLBEING	65%	▲	61%	▼	71%
FINANCES IN RETIREMENT	66%	▲	55%	▼	56%
Old-Age Dependency	32%	▼	33%	▼	40%
Bank Non-Performing Loans	61%	▲	58%	▲	43%
Inflation	54%	▼	100%	▲	44%
Interest Rates	77%	▲	1%	▼	9%
Tax Pressure	26%	▲	18%	▲	8%
Government Indebtedness	37%	▲	34%	▲	28%
Governance	87%	–	87%	▼	88%

17. Israel

Israel slips from 16th to 17th in overall GRI ranking, despite its overall score rising from 70% to 72%. The disparity between a slightly higher overall score and a slightly lower overall ranking illustrates how countries like Israel had to generate a substantial increase in their overall score in order to move up the rankings this year.

As it is, Israel improves on the sub-indices for Finances in Retirement, rising two spots to 11th, and Material Wellbeing, gaining one place to 24th. Israel's rise on the Finances in Retirement sub-index is due to increases on the indicators for old-age dependency and bank non-performing loans. On the latter, Israel moves up seven spots to 9th overall. Israel also increases its scores in the tax pressure, government indebtedness and governance indicators, with the country substantially lowering its tax burden on labor.

On the Material Wellbeing sub-index, Israel's upward movement is a result of a sharp increase in the unemployment indicator, where it is now 16th, up from 18th. The labor market in Israel continues to be strong, demonstrating that the country has been able to bounce back from the COVID-19 pandemic.

In addition, Israel's Quality of Life sub-index score slightly increases as well, although it remains in 18th place. The higher score is driven by an increase in virtually all indicators, with the exception of a five-percentage point decrease in the biodiversity and habitat indicator, where it remains in 40th spot. Israel ranks in the top five for the happiness indicator (4th), up from 9th in the previous year.

Israel's Health sub-index ranks 22nd this year, despite the score decreasing. This is driven by a slip in the country's average life expectancy during the COVID-19 pandemic, similar to the experience of other countries in the index. Despite the decrease in the country's average life expectancy, Israel ranks among the top ten (8th) for this indicator.

17	ISRAEL				
RANKING			SCORE		
2023	2022	2013	2023	2022	2013
17	16	22	72%	70%	72%

SUB-INDEX AND INDICATOR SCORES	SCORES 2023	CHANGES	2022	CHANGES	2013
HEALTH	81%	▼	82%	▲	80%
QUALITY OF LIFE	76%	▲	74%	▼	81%
MATERIAL WELLBEING	64%	▲	60%	▼	67%
FINANCES IN RETIREMENT	68%	▲	66%	▲	60%
Old-Age Dependency	57%	▲	55%	▼	67%
Bank Non-Performing Loans	66%	▲	56%	–	56%
Inflation	71%	▼	100%	▲	62%
Interest Rates	77%	▲	73%	▲	72%
Tax Pressure	33%	▲	22%	▲	10%
Government Indebtedness	49%	▲	48%	▲	31%
Governance	79%	–	79%	–	79%

18. Czech Republic

The Czech Republic falls out of the top ten to 18th overall this year, despite its overall score dipping by one percentage point to 72%; an indication of the fierce competition for places in the upper levels of the GRI rankings.

The country's scores decline in almost all sub-indices, with the biggest relative fall on the Finances in Retirement sub-index, where the Czech Republic falls from 15th to 23rd. Within this, it falls to 34th on the old-age dependency indicator and to 38th on the inflation indicator. In central and eastern European countries such as the Czech Republic, many remember high inflation in the 1990s, making them quick to demand wage rises and to raise prices, which could make it harder to bring inflation down.

On the Material Wellbeing sub-index, the Czech Republic slips from first to 4th spot in the rankings. The decrease is due to lower scores for the income equality and income per capita indicators. The country maintains its 1st place ranking in the unemployment indicator, with the unemployment rate the lowest in the EU.

On the Quality of Life sub-index, the Czech Republic drops one spot to 25th, despite a higher score, up two percentage points to 70%. The higher score is driven by increases in the water and sanitation indicator, as well as in the air quality and environmental factors indicators. In particular, air pollution has been improving; the Czech government has set a goal of phasing out coal as an energy source by 2033, earlier than the original 2038 target date recommended by the government's Coal Commission.

The Czech Republic's score in the Health sub-index falls to 72%, due to a decrease in average life expectancy after the global pandemic. As a result, it falls behind its neighbors, lagging the EU average.

18	CZECH REPUBLIC	

RANKING			SCORE		
2023	2022	2013	2023	2022	2013
18	10	16	72%	73%	75%

SUB-INDEX AND INDICATOR SCORES	SCORES 2023	CHANGES	2022	CHANGES	2013
HEALTH	72%	▼	76%	▼	84%
QUALITY OF LIFE	70%	▲	68%	▼	76%
MATERIAL WELLBEING	82%	▼	84%	▲	81%
FINANCES IN RETIREMENT	63%	▼	64%	▲	61%
Old-Age Dependency	27%	▼	29%	▼	47%
Bank Non-Performing Loans	48%	▼	49%	▲	37%
Inflation	36%	▼	93%	▼	100%
Interest Rates	81%	▲	60%	▼	66%
Tax Pressure	22%	▲	15%	▲	8%
Government Indebtedness	67%	▼	73%	▲	47%
Governance	84%	▲	83%	▲	82%

19. Belgium

Belgium increases its overall score to 72% this year, jumping one spot to 19th overall in the rankings. The country's score increases in nearly all sub-indices, with the exception of the Health sub-index, which decreases by three percentage points and by two places to 17th. The decline in the Health sub-index is based on a decline in Belgium's average life expectancy, from 21st to 27th . This is a repercussion of COVID-19 that has impacted many countries in the index.

The Finances in Retirement sub-index score increases to 59%, which lifts Belgium six spots to 32nd. On the indicators for bank non-performing loans, tax pressure, government indebtedness and governance, Belgium holds its position in the rankings, while it falls 15 spots to 16th for inflation and four spots to 30th on interest rates. With inflation on the rise, Belgium is one of the few European countries to implement automatic price indexation of private sector wages. Earlier this year, over half a million Belgian employees experienced a salary increase of roughly 11%.

The country's score in the Material Wellbeing sub-index increases slightly, following improvements in the income equality and unemployment indicators. Since the turn of the century, the employment rate of people aged 20-64 has increased by roughly 10%, with the rate of those who are 55-64 having more than doubled from 26% in 2000 to 56% in 2022.

Belgium's score in the Quality of Life sub-index also slightly increases to 76%, with improvements in the water and sanitation, air quality, and environmental factors indicators. Recently, Belgium, along with nine other countries and the European Commission, agreed to substantially expand their wind power capacity in the North Sea. The leaders met in Ostend, Belgium and pledged to increase the capacity of offshore wind farms, as well as to develop and expand their carbon capture projects.

19	BELGIUM	

RANKING		
2023	2022	2013
19	20	12

SCORE		
2023	2022	2013
72%	69%	76%

SUB-INDEX AND INDICATOR SCORES	SCORES 2023	CHANGES	2022	CHANGES	2013
HEALTH	82%	▼	85%	▼	86%
QUALITY OF LIFE	76%	▲	74%	▼	81%
MATERIAL WELLBEING	71%	▲	70%	▼	83%
FINANCES IN RETIREMENT	59%	▲	51%	▼	58%
Old-Age Dependency	31%	–	31%	▼	38%
Bank Non-Performing Loans	42%	▼	45%	▼	52%
Inflation	64%	▼	100%	▲	62%
Interest Rates	75%	▲	1%	▼	69%
Tax Pressure	6%	▲	4%	▲	2%
Government Indebtedness	32%	▲	30%	▲	23%
Governance	86%	–	86%	▼	88%

20. United States

The United States slips two places to 20th in the overall rankings this year, despite increasing its overall score from 69% in 2022 to 71%. The overall score improvement is primarily a result of an increase in the Material Wellbeing sub-index, driven by increases in the unemployment indicator as well as the income inequality indicator. By the end of 2022, the United States' unemployment rate reached its lowest level in over 50 years, matching the unemployment rate from just before the pandemic. Income inequality in the US has also stabilized in the last decade, in part due to the rapid growth in wages for low-paying jobs amid the post-COVID revival of the service industry.

The US exhibits a lower score for the Health sub-index, falling from 85% in 2022 to 78%, as life expectancy took a hit from the COVID-19 pandemic and an increase in drug-related and accident deaths. On the Health sub-index, this means the US falls eight spots to 25th overall.

The Finances in Retirement scores remain mostly consistent with last year's numbers, keeping the US in 13th spot, down from 11th in 2022. Inflation and government indebtedness worsened, while bank non-performing loans, interest rate, and tax pressure scores improved over the past year.

The Quality of Life sub-index also remained steady over the last year (72%), which keeps the US in 21st place on this sub-index. Most environmental indicators saw slight increases (air quality, water and sanitation, environmental factors) with the exception of biodiversity and habitat, which saw a slight dip (from 66% to 61%). The happiness score also slightly decreased (from 84% to 81%).

20	UNITED STATES	

RANKING		
2023	2022	2013
20	18	20

SCORE		
2023	2022	2013
71%	69%	72%

SUB-INDEX AND INDICATOR SCORES	2023	CHANGES	2022	CHANGES	2013
HEALTH	78%	▼	85%	▲	82%
QUALITY OF LIFE	72%	–	72%	▼	80%
MATERIAL WELLBEING	66%	▲	56%	▼	65%
FINANCES IN RETIREMENT	67%	–	67%	▲	63%
Old-Age Dependency	42%	–	42%	▼	56%
Bank Non-Performing Loans	68%	▲	67%	▲	44%
Inflation	67%	▼	100%	▲	70%
Interest Rates	78%	▲	73%	▲	63%
Tax Pressure	44%	▲	33%	▲	17%
Government Indebtedness	26%	▼	27%	▲	22%
Governance	84%	–	84%	▼	87%

21. Korea Rep.

South Korea slides four spots to 21st in this year's GRI rankings after rising six places in the previous year, despite maintaining the same overall score.

South Korea's decline in ranking is attributable to fall in the Quality of Life sub-index, where it drops from 34th to 37th. This decline outweighs relative rises in the Health sub-index (24th), Material Wellbeing (14th), and the Finances in Retirement sub-index (2nd).

Within the Finances in Retirement sub-index, 2023 sees a drop in the government indebtedness and old-age dependency indicators. Rising energy prices are also resulting in higher inflation, where South Korea drops from 1st to 5th. Despite higher inflation prompting South Korea's central bank to hike interest rates, the country falls from 12th to 21st in the interest rates indicator. South Korea's maintains its first place ranking in the bank nonperforming loans indicator, while also increasing in the tax pressure and governance indicators.

In the Quality of Life sub-index, South Korea drops from 34th to 37th. Within this, it falls one spot to 28th in air quality but either rises one spot or holds its position in the other metrics. For instance, in biodiversity and habitat, it rises one spot to 35th and in happiness it rises one spot to 38th.

In the Health sub-index, South Korea edges up a single place to 24th, helped with a rise from 5th to 3rd in life expectancy. And In the Material Wellbeing sub-index, it climbs two spots to 14th, moving from 5th to 1st on unemployment.

21	KOREA REP

RANKING			SCORE		
2023	2022	2013	2023	2022	2013
21	17	17	70%	70%	74%

SUB-INDEX AND INDICATOR SCORES	SCORES 2023	CHANGES	2022	CHANGES	2013
HEALTH	80%	–	80%	▲	78%
QUALITY OF LIFE	59%	–	59%	▼	71%
MATERIAL WELLBEING	71%	▲	68%	▼	83%
FINANCES IN RETIREMENT	73%	–	73%	▲	65%
Old-Age Dependency	47%	▼	51%	▼	70%
Bank Non-Performing Loans	100%	–	100%	▲	67%
Inflation	77%	▼	100%	▲	52%
Interest Rates	77%	▲	72%	▼	74%
Tax Pressure	37%	▲	27%	▲	17%
Government Indebtedness	60%	▼	63%	▲	52%
Governance	84%	▲	83%	▲	80%

22. Malta

Malta's overall rank increases by one spot to 22nd, reflecting a slight increase in their overall score. This is a result of a two-percentage point improvement in the Finances in Retirement sub-index, primarily driven by increases in the old-age dependency and tax pressure indicators. Despite the inflationary environment worsening in Malta over the last year, the inflation rate released earlier this year shows the country has among the lowest rate in the EU as a result of energy, fuel, and non-processed food subsidies. The Maltese government has allocated roughly €600 million in subsidies this past year in order to maintain energy, fuel, and grain prices.

The country's Material Wellbeing sub-index score slightly increases, keeping it in the top ten for this category, although it drops one spot to 9th. Its relatively high placing reflects an improvement in the unemployment rate indicator, up from 4th to first spot. The unemployment rate in Malta has stabilized, and similar to the inflation rate, is among the lowest in the EU. The income per capita indicator also increases slightly to 70%, up from 68%.

The Quality of Life sub-index score remains the same as last year's score, despite slight increases in the water and sanitation, air quality, and environmental factors indicators. According to a study conducted between March and April of last year, the Maltese are considered the most concerned among Europeans about the impact of poor air quality on their overall health.

There are no significant changes in the Health sub-index score for Malta. The Maltese life expectancy slightly drops, reflecting the lasting effects of the pandemic.

22	MALTA		

RANKING			SCORE		
2023	2022	2013	2023	2022	2013
22	23	26	69%	68%	69%

SUB-INDEX AND INDICATOR SCORES	SCORES 2023	CHANGES ▲ – ▼	2022		2013
HEALTH	78%	–	78%	▼	79%
QUALITY OF LIFE	61%	–	61%	▲	60%
MATERIAL WELLBEING	73%	▲	72%	▼	80%
FINANCES IN RETIREMENT	65%	▲	63%	▲	60%
Old-Age Dependency	37%	▲	26%	▼	50%
Bank Non-Performing Loans	30%	▼	31%	▲	25%
Inflation	56%	▼	100%	▲	88%
Interest Rates	76%				72%
Tax Pressure	50%	▲	31%	▲	6%
Government Indebtedness	56%	▼	58%	▲	32%
Governance	82%	▼	83%	▼	86%

23. France

France rises one spot to 23rd in this year's GRI rankings with an overall score of 69%, up from 66% last year, led by strong performance in the Health sub-index where it ranks 8th this year.

Finances in Retirement improved markedly this year, rising from 48% to 55% for 2023. Several factors within this sub-index remain relatively steady for France this year, but like many other countries, it took a hit from rising inflation. France drops one spot in old-age dependency to 39th this year, as it suffers from an aging population. While recent policy action has moved the retirement age closer to modern norms, it remains behind many OECD countries.

France's Health score dropped to 88% in 2023 from 90% last year. This was driven by a drop in life expectancy, reflecting the impact of the Covid-19 pandemic. France holds steady this year at 14th in overall health expenditure and remains 1st in the GRI for insured health expenditure.

Material Wellbeing rose from 57% to 58% this year. While France dipped slightly in income per capita (17th from 16th) and income equality (16th from 15th), unemployment was a bright spot, as the country rises from one spot to 35th. Partly this is due to a post-pandemic economy recovery and the impact of government reforms, but some critics argue that changes to how unemployment is measured are a factor here.

France remains 14th in the Quality of Life sub-index with year-over-year improvements in the rankings for biodiversity and habitat (5th to 3rd), air quality (11th to 10th), and water and sanitation (18th to 16th). Happiness falls from 20th to 21st this year, while environmental factors drop from 13th to 14th despite a score increase from 64% to 66%.

23	FRANCE

RANKING			SCORE		
2023	2022	2013	2023	2022	2013
23	24	15	69%	66%	75%

SUB-INDEX AND INDICATOR SCORES	SCORES 2023	CHANGES ▲ – ▼	2022		2013
HEALTH	88%	▼	90%	▲	88%
QUALITY OF LIFE	79%	▲	78%	▼	85%
MATERIAL WELLBEING	58%	▲	57%	▼	74%
FINANCES IN RETIREMENT	55%	▲	48%	▼	58%
Old-Age Dependency	23%	▼	25%	▼	38%
Bank Non-Performing Loans	35%	▼	39%	▼	41%
Inflation	66%	▼	100%	▲	90%
Interest Rates	75%	▲	1%	▼	67%
Tax Pressure	2%	▲	1%	▼	3%
Government Indebtedness	31%	–	31%	▲	27%
Governance	85%	–	85%	▼	86%

24. Japan

Japan slides two places down the GRI rankings to 24th as Finances in Retirement continues to act as a drag on overall performance.

Health, where Japan moves up one spot to 2nd, again represents the country's best sub-index by a distance. A static set of indicator results sees Japan hold onto first position in life expectancy, ninth place in insured health expenditure and 18th in health expenditure per capita. Japan's life expectancy of 84.62 is the highest in the GRI. This is attributable to lower mortality which in turn is a function of lower obesity and better diet.

Finances in Retirement, where Japan drops from 40th to 41st, is again the country's worst-performing sub-index. Japan remains rooted to the bottom of the old-age dependency rankings (44th) as its high life expectancy translates into more older people and fewer workers supporting them. The country also occupies bottom spot in the interest rate indicator, falling 19 places to 44th. Japan's low interest rate policy comes despite rising wages and inflationary pressures. Indeed, the country's core consumer inflation hit a 41-year high in January 2023. As such, Japan loses its number one ranking for inflation but still finishes 3rd in what is an isolated bright spot in Finances.

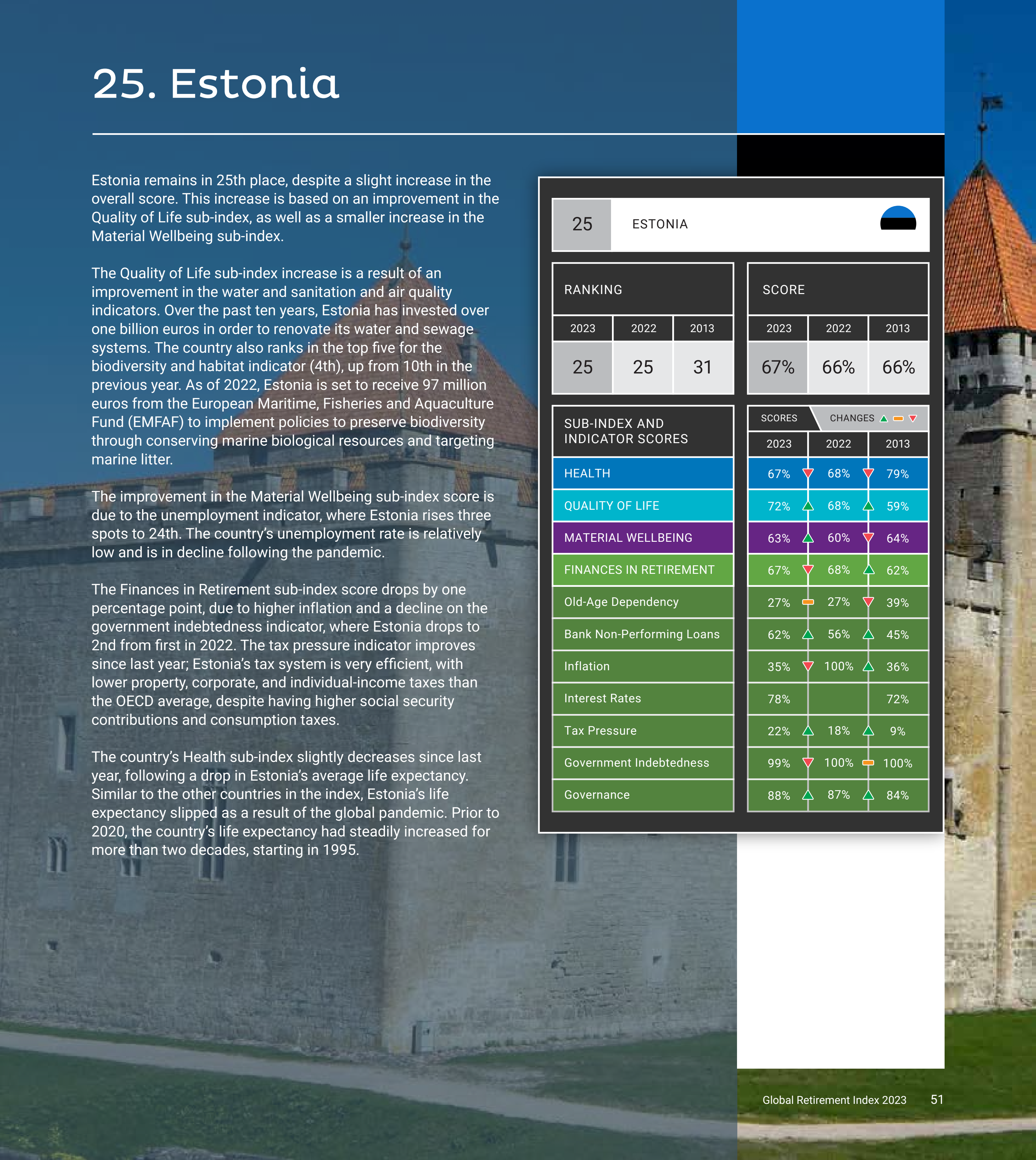
Japan descends eight places in Material Wellbeing to 18th. While it falls down the rankings in income equality (27th to 30th) and income per capita (20th to 25th) it retains the top spot in unemployment.

Finally, Japan slips one place to 26th in Quality of Life. However, water and sanitation (15th to 17th) is the only indicator in which it declines in ranking. It rises seven places in biodiversity and habitat to 16th, climbs two spots in happiness to 34th and edges up one place in air quality to 13th.

24 JAPAN

RANKING			SCORE		
2023	2022	2013	2023	2022	2013
24	22	27	68%	69%	69%

SUB-INDEX AND INDICATOR SCORES	2023	CHANGES	2022	CHANGES	2013
HEALTH	91%	–	91%	▲	84%
QUALITY OF LIFE	69%	▲	67%	▼	76%
MATERIAL WELLBEING	70%	▼	72%	▼	77%
FINANCES IN RETIREMENT	51%	–	51%	▲	46%
Old-Age Dependency	1%	▼	3%	▼	15%
Bank Non-Performing Loans	50%	▼	61%	▲	56%
Inflation	85%	▼	100%	▲	1%
Interest Rates	46%	▲	19%	▲	1%
Tax Pressure	29%	▲	19%	▲	13%
Government Indebtedness	1%	–	1%	–	1%
Governance	88%	–	88%	▲	87%



25. Estonia

Estonia remains in 25th place, despite a slight increase in the overall score. This increase is based on an improvement in the Quality of Life sub-index, as well as a smaller increase in the Material Wellbeing sub-index.

The Quality of Life sub-index increase is a result of an improvement in the water and sanitation and air quality indicators. Over the past ten years, Estonia has invested over one billion euros in order to renovate its water and sewage systems. The country also ranks in the top five for the biodiversity and habitat indicator (4th), up from 10th in the previous year. As of 2022, Estonia is set to receive 97 million euros from the European Maritime, Fisheries and Aquaculture Fund (EMFAF) to implement policies to preserve biodiversity through conserving marine biological resources and targeting marine litter.

The improvement in the Material Wellbeing sub-index score is due to the unemployment indicator, where Estonia rises three spots to 24th. The country's unemployment rate is relatively low and is in decline following the pandemic.

The Finances in Retirement sub-index score drops by one percentage point, due to higher inflation and a decline on the government indebtedness indicator, where Estonia drops to 2nd from first in 2022. The tax pressure indicator improves since last year; Estonia's tax system is very efficient, with lower property, corporate, and individual-income taxes than the OECD average, despite having higher social security contributions and consumption taxes.

The country's Health sub-index slightly decreases since last year, following a drop in Estonia's average life expectancy. Similar to the other countries in the index, Estonia's life expectancy slipped as a result of the global pandemic. Prior to 2020, the country's life expectancy had steadily increased for more than two decades, starting in 1995.

25 ESTONIA

RANKING 2023	RANKING 2022	RANKING 2013	SCORE 2023	SCORE 2022	SCORE 2013
25	25	31	67%	66%	66%

SUB-INDEX AND INDICATOR SCORES	SCORES 2023	CHANGES 2022	2013
HEALTH	67%	68%	79%
QUALITY OF LIFE	72%	68%	59%
MATERIAL WELLBEING	63%	60%	64%
FINANCES IN RETIREMENT	67%	68%	62%
Old-Age Dependency	27%	27%	39%
Bank Non-Performing Loans	62%	56%	45%
Inflation	35%	100%	36%
Interest Rates	78%		72%
Tax Pressure	22%	18%	9%
Government Indebtedness	99%	100%	100%
Governance	88%	87%	84%

References

Central Intelligence Agency, The World Factbook. Accessible online at: https://www.cia.gov/library/publications/the-world-factbook/index.html

Country statistical agencies, central banks, and ministries of finance, economy, and trade; available at http://www.bis.org/cbanks.htm; and https://unstats.un.org/home

Dasgupta, P. and Weale, M. (1992), "On Measuring the Quality of Life", World Development, Vol. 20:1, pp. 119-131.

Emerson, J. W., Hsu, A., Levy, M. A., de Sherbinin, A., Mara, V., Esty, D. C., & Jaiteh, M. (2012), "2012 Environmental Performance Index and Pilot Trend Environmental Performance Index." New Haven, CT: Yale Center for Environmental Law & Policy.

Helliwell, J., Layard, R., & Sachs, J. (2021). "World Happiness Report 2022", New York: Sustainable Development Solutions Network.

International Monetary Fund (2022), Financial Soundness Indicators. Washington, DC. https://www.imf.org/external/np/sta/fsi/eng/fsi.htm

Klugman, Rodriguez and Choi (2011), "The HDI 2010: New Controversies, Old Critiques", Human Development Research Paper 2011/1, UNDP, New York.

National Institute of Population and Social Security Research. Tokyo, Japan. http://www.ipss.go.jp/index-e.asp

Organization for Economic Co-operation and Development (2022), OECD.Stat. http://stats.oecd.org/

Social Security Administration. "Social Security Programs Throughout the World", Washington, DC. https://www.ssa.gov/policy/docs/progdesc/ssptw/

Statistical Office of the European Communities (2020), Eurostat. Luxembourg. http://ec.europa.eu/eurostat/data/database

United Nations. "World Population Prospects", New York. https://population.un.org/wpp/

U.S. Energy Information Administration (2020). http://www.eia.gov/environment/data.cfm

Wendling, Z. A., Emerson, J. W., de Sherbinin, A., Esty, D. C., et al. (2020). "2020 Environmental Performance Index." New Haven, CT: Yale Center for Environmental Law & Policy. epi.yale.edu

World Bank (2022), World Development Indicators 2022. Washington, DC. https://datacatalog.worldbank.org/home

World Bank (2021), Worldwide Governance Indicators, 2021 Update. Washington, DC. http://info.worldbank.org/governance/wgi/index.aspx#home

Detailed Framework

Index	Sub-index	Policy Category Weight (% of Index)	Indicators	Indicator Weight (% of Sub-Index)	Data Source	Latest Data Available	Target	Low performance benchmark	Statistical transformation
Health Index	Life Expectancy Index	GEOMEAN	Life expectancy at birth	1	World Bank WDI 2022	2019	Sample Maximum (84.36 years, Japan)	Sample Minimum (69.66 years, India)	None
	Health Expenditure Per Capita Index	GEOMEAN	Current health expenditure per capita, PPP (current international $)	1	World Bank WDI 2022	2019	Sample Maximum ($10,921.01, USA)	Sample Minimum ($211.00, India)	Natural Logarithm
	Non-Insured Health Expenditure Index	GEOMEAN	Out-of-pocket expenditure (% of current health expenditure)	1	World Bank WDI 2022	2019	Sample Minimum (9.26%, France)	100%	None
Material Wellbeing Index	Income Equality Index	GEOMEAN	GINI Index	1	Eurostat, OECD, World Bank WDI 2022, CIA World Factbook	Between 2011 and 2020 depending on Country	Sample Minimum (20.90, Slovak Republic)	Sample Maximum (53.40, Brazil)	Natural Logarithm
	Income per Capita Index	GEOMEAN	GNI per capita, PPP (current international $)	1	World Bank WDI 2022	2020	Sample Maximum ($86,480, Singapore)	Sample Minimum ($6,440, India)	Natural Logarithm
	Unemployment Index	GEOMEAN	Unemployment (% of total labor force) (modeled ILO estimate)	1	World Bank WDI 2022	2021	3% Unemployment	Sample Maximum (14.80%, Greece)	Natural Logarithm
Finances in Retirement Index	Institutional Strength Index	0.5	Average of World Bank Governance Indicators	1	World Bank Worldwide Governance Indicators 2021	2020	Maximum on Scale (2.5)	Minimum on Scale (-2.5)	Natural Logarithm
	Investment Environment Index	0.5	Age dependency ratio, old (% of working age population)	GEOMEAN	World Bank WDI 2022	2020	10%	50%	Natural Logarithm
			Bank nonperforming loans to total gross loans (%)	GEOMEAN	IMF Financial Soundness Indicators	2019, 2020. 2021	Sample Minimum (0.22%, South Korea)	Sample Maximum (12.82%, Greece)	Natural Logarithm
			Inflation, consumer prices (% annual)	GEOMEAN	World Bank WDI 2022	2015 to 2019	2%	Sample Maximum (12.54%, Turkey)	Natural Logarithm
			Real interest rate (%)	GEOMEAN	World Bank WDI 2022, OECD	2015 to 2019	20%	0%	Natural Logarithm
			Public Debt (% of GDP)	GEOMEAN	CIA World Factbook	2021	Sample Minimum (18.50%, Estonia)	Sample Maximum (256.22%, Japan)	Natural Logarithm
			Tax Burden (% of GDP)	GEOMEAN	Country statistical agencies, central banks, and ministries of finance economy	2021	Sample Minimum (6.81%, India)	Sample Maximum (46.34%, Denmark)	Natural Logarithm
Quality of Life Index	Air Quality Index	0.125 GEOMEAN	PM2.5 Exposure	0.55	Environmental Performance Index 2020	2019	Sample Minimum (71.68, Iceland)	Sample Maximum (2,706.53, India)	Natural Logarithm
			Household Solid Fuels	0.40	Environmental Performance Index 2020	2019	Sample Minimum (0.22, Switzerland)	Sample Maximum (1,837.97, India)	Natural Logarithm
			Ozone Exposure	0.05	Environmental Performance Index 2020	2019	Sample Minimum (2.66, Ireland)	Sample Maximum (293.93, India)	Natural Logarithm
	Water and Sanitation Index	0.125 GEOMEAN	Unsafe Drinking Water	0.6	Environmental Performance Index 2020	2019	Sample Minimum (1.68, Greece)	Sample Maximum (1,425.45, India)	Natural Algorithm
			Unsafe Sanitation	0.4	Environmental Performance Index 2020	2019	Sample Minimum (0.41, United Kingdom)	Sample Maximum (815.66, India)	Natural Algorithm
	Biodiversity and Habitat Index	0.125 GEOMEAN	Marine Protected Areas	0.2	Environmental Performance Index 2020	2020	10% of country's exclusive economic zone (EEZ) designated as a marine protected area	0%	None
			Terrestrial Protected Areas (National Biome Weights)	0.2	Environmental Performance Index 2020	2020	17% protection for all biomes within its borders	0%	None
			Terrestrial Protected Areas (Global Biome Weights)	0.2	Environmental Performance Index 2020	2020	17% global protection goal	0%	None
			Species Protection Index	0.1	Environmental Performance Index 2020	2019	100%	0%	None
			Protected Areas Representativeness Index	0.1	Environmental Performance Index 2020	2016	0.31	Sample Minimum (0.04, Singapore)	None
			Biodiversity Habitat Index	0.1	Environmental Performance Index 2020	2015	1.0	0.0	None
			Species Habitat Index	0.1	Environmental Performance Index 2020	2014	100.0	Sample Minimum (96.4, Brazil)	None
	Environmental Factors Index	0.125 GEOMEAN	CO2 emissions per capita	0.33	US Energy Information Administration (EIA), World Bank WDI 2022	2019	1262 kg CO2 eq. (Estimated value associated with 50% reduction in global GHG emissions by 2050, against 1990 levels)	19588.33059	Natural Logarithm
			CO2 emissions per GDP	0.33	US Energy Information Administration (EIA), World Bank WDI 2022	2019	0.07642 kg CO2 eq. (Estimated value associated with 50% reduction in global GHG emissions by 2050, against 1990 levels)	1.532823116	Natural Logarithm
			CO2 emissions per electricity generation	0.165	US Energy Information Administration (EIA), World Bank WDI 2022	2019	0 grams CO2 per KWh	8.453269722	Natural Logarithm
			Renewable electricity	0.165	US Energy Information Administration (EIA), World Bank WDI 2022	2019	100% electricity from renewable sources	0%	None
	Happiness Index	0.5 GEOMEAN	Happiness (0-10)	1	World Happiness Report 2022	2021	Sample Maximum (7.82, Finland)	Sample Minimum (3.78, India)	Natural Logarithm

Appendix A

Methodology

The Natixis CoreData Global Retirement Index is a composite welfare index which combines 18 target-oriented indicators, grouped into four thematic sub-indices.

The four sub-indices cover four relevant considerations for welfare in old age and are:

- Health Index
- Quality of Life Index
- Material Wellbeing Index
- Finances in Retirement Index

Constructing the Indicators

The first step in expanding the index is to construct the 18 indicators. These are constructed by selecting and preparing the raw data obtained from reliable secondary sources, and then transforming it into normalized indices.

In order to create normalized indices, minima and maxima need to be established. As a target-oriented performance index, the maxima are determined as ideal outcomes. The selection of target varies from variable to variable and will be explored in greater depth later on.

The minima are in fact the opposite, and are defined as lower performance benchmarks, which mark the worst possible scenario. In some cases, they will refer to subsistence minimum levels and in others, simply as the worst observed value in the sample for that variable.

These indicators are created, following Emerson, et al. (2012) and based on a “proximity-to-target” methodology by which “each country’s performance on any given indicator is measured based on its position within a range” established by the lower performance benchmark and the target, on a scale from 0.01 (instead of 0 to facilitate further calculation) to 1, where 0.01 is equal or lower than the lower performance benchmark and 1 equal or higher than the target.

The general formula to normalize the indicators is then given by:

$$\textit{Indicator} = \frac{\text{Observed value - lower performance benchmark}}{\text{Target - lower performance benchmark}}$$

However, this formula is, in certain cases, adapted to the characteristics of the data for each variable.

Again, following Emerson et al. (2012), most indicators are transformed into logarithms due to the high level of skewness of the data. This has the advantage of identifying not only differences between the worst and the best performers, but it more clearly differentiates between top performing countries, allowing to better distinguish variations among them.

Moreover, using logarithms allows for better identification of differences across the whole scale, distinguishing between differences in performance which are equal in the absolute but very different proportionally.

Also, logarithmic functions are a better representation of variables which have decreasing marginal welfare benefits, such as income.

Once the indicators have been created, they are aggregated by obtaining their geometric mean[3] to obtain the thematic indices. The geometric mean offers a number of advantages over the arithmetic mean;[4] this will be discussed later in this chapter.[5]

[1] Emerson, J. W., Hsu, A., Levy, M. A., de Sherbinin, A., Mara, V., Esty, D. C., & Jaiteh, M. (2012), “2012 Environmental Performance Index and Pilot Trend Environmental Performance Index.” New Haven, CT: Yale Center for Environmental Law & Policy.

[2] Logarithmic form: variables with skewed distributions are transformed into logarithmic form by taking natural logarithms of the values to make the distribution less skewed. When calculating an indicator we transform into logarithmic form by doing the following:
Where:
t = target or sample maximum
m = lower performance benchmark or sample minimum
x = value of the variable
non-logarithmic indicator = (x-m) / (t-m) -> take logs -> indicator in logarithmic form = [ln(x)-ln(m)] / [ln(t)-ln(m)]

[3] Geometric mean is a representation of the typical value or central tendency of a series of numbers calculated as the nth root of the product of n numbers.
Geometric mean = $\sqrt[n]{x_1 \times x_2 \times \ldots \times x_n}$

[4] Arithmetic mean (or average) is a representation of the typical value or central tendency of a series of numbers calculated as the sum of all the values in the series and divided by the number in the series. Arithmetic mean = $\frac{x_1 + x_2 + \ldots + x_n}{n}$

[5] See Constructing the Global Retirement Index on page 58.

The four thematic sub-indices are constructed using the indicators in the following way:

1. **The Health in Retirement Index:** this sub-index is obtained by taking the geometric mean of the following indicators:

    a. **Life expectancy Index:** obtained using data from the World Bank's World Development Indicators (WB's WDI). The target for this indicator is the sample maximum which is equal to 84.62 years, and the low performance benchmark is equal to 70.13 years, a figure observed as the sample minimum.

    b. **Health expenditure per capita Index:** obtained using data on current health expenditure per capita, PPP (current international $) from WB's WDI 2021. The target set for this indicator is the sample maximum, equal to $10,921.01 USD, and the low performance benchmark is equal to the sample minimum of $211.00 USD. The indicator is transformed into logarithms, as the marginal returns to extra expenditure are decreasing.

    c. **Non-insured health expenditure Index:** this indicator is included to take into account the level of expenditure in health that is not insured. The smaller the proportion of expenditure in healthcare that is uninsured, the higher the probability of having access to healthcare. This indicator is calculated using data on out-of-pocket expenditure (percentage of current health expenditure), included in the WB's WDI 2021. The target for this indicator is equal to the sample minimum of 9.26% and the low performance benchmark is equal to 100%, which means that none of the population is covered by health insurance.

2. **The Material Wellbeing in Retirement Index:** this sub-index measures the ability of a country's population to provide for their material needs. The following indicators are aggregated by obtaining their geometric mean to obtain a single measure:

    a. **Income per capita Index:** this indicator is calculated using data for the gross national income per capita, PPP (current International $) from the WB's WDI. The purchasing power parity (PPP) version is used as it provides a better approximation to the real purchasing power of incomes across countries. The target used for this indicator is the sample maximum of $102,450 USD, and the low performance benchmark is equal to the sample minimum of $7,130 USD. Logarithmic transformation is applied to calculate the indicator.

    b. **Income equality Index:** this indicator is included as it has been generally accepted that average levels of income in a society cannot on their own measure material welfare, and including a measure of equality ensures that countries with higher and more equally distributed income get a better score. This index is constructed using the GINI index with data obtained from Eurostat, the Organization for Economic Cooperation and Development (OECD), the WB's WDI and the CIA World Factbook. The target is set at 20.90, which is the sample minimum. The low performance benchmark is set at 52.90, which is the sample maximum. The index is presented in a logarithmic form.

    c. **Unemployment Index:** a measure of unemployment is included in this index, despite the fact that its focus is on people who have already retired from the labor market. This is because societies with high levels of unemployment will see their social security systems under pressure, putting in danger the financing and provision of services for the elderly. Moreover, retirees in countries with low unemployment levels will have a better possibility of complementing their pension incomes with employment income, which is becoming increasingly necessary and common. High levels of unemployment are also indicative of a country undergoing economic problems and it is likely that this will affect the living standards of those in retirement. The target for this index is 3% unemployment, at which level structural and cyclical unemployment can be assumed to be 0 and only frictional unemployment persists, which indicates practical full employment. The low performance benchmark is set at 12.80%, which is the sample maximum. The index undergoes a logarithmic transformation and the raw data used for this index was sourced from the OECD, The Economist, and the IMF World Economic Outlook.

3. **Finances in Retirement Index:** this sub-index captures the soundness of a country's financial system as well as the level of returns to savings and investment and the preservation of the purchasing power of savings. It is calculated as the arithmetic mean of the institutional strength index and the investment environment index, which is in itself the geometric mean of six indicators of the soundness of government finances and the strength of the financial system. The rationale behind this construction is that while a favorable investment environment is extremely important for the finances of retirees, this will only be long lasting and stable in the presence of sound institutions, low levels of corruption, strong property rights and a strong regulatory framework. Hence, good governance is a necessary condition for long-term financial strength and stability and as much receives an equal weight.

    a. **Institutional Strength Index:** is calculated under logarithms after obtaining the arithmetic mean of the estimates of governance from six different dimensions (Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption) of the WB's Worldwide Governance Indicators (2022 Update). The target level is set equal to the maximum on the scale used by the indicators, which is +2.5, while the lower performance benchmark is equal to the lowest value of the scale, -2.5.

b. Investment Environment Index: this is calculated as the geometric mean of the following indicators:

I. Old-age dependency Index: this indicator is included because a high dependency ratio poses a severe threat to the capacity of society to pay for the care of the elderly, as well as risks reducing the value of savings in the long run, through several channels such as a fall in asset prices and a fall in output, among others. This index is transformed into logarithms and is calculated using data on old-age dependency ratio (percentage of working-age population) from the WB's WDI 2021. The target value is equal to 10%, which reflects healthy demographics, where for every old-age dependent there are 10 people in the working force. The low performance benchmark is equal to 50%, as it is potentially unsustainable to have less than two workers for every old-age dependent.

II. Inflation Index: this is important due to the fact that high inflation will reduce the purchasing power of savings and pensions, which can affect retirees disproportionately. The data used is on annual consumer price inflation and is sourced from the OECD. The target is 2%, which is a level of inflation pursued by major central banks and considered to be sufficiently close to price stability and sufficiently far from deflation to provide some buffer from either. The low performance benchmark is set at the sample maximum 55.18%. This indicator undergoes a logarithmic transformation when calculated.

III. Real interest rate Index: this is included as higher interest rates will increase the returns to investment and saving, and in turn increase the level of wealth of retirees, who tend to benefit more than other age groups. Real interest rate is used instead of nominal interest rate to eliminate the effect of inflation. The data for this indicator is sourced from the WB's WDI 2021 and is completed from the OECD[6],[7]. The target is 20% and the low performance benchmark is 0%. The data is multiplied by 100 before logarithmic transformation applied.

IV. Tax pressure Index: the importance of this indicator lies in the fact that higher levels of taxation will decrease the level of disposable income of retirees and affect their financial situation. Data used is the tax burden from country statistical agencies, central banks, and ministries of finance, economy, and trade, which measures the total taxes collected as percentage of GDP. The target is set at the sample minimum of 12.00% of GDP while the low performance benchmark is the sample maximum of 46.50% of GDP.

V. Bank non-performing loan Index: this indicator captures the strength of the banking system by looking at the proportion of loans that are defaulted on. This index is transformed into logarithms and is constructed using the data observed from the IMF Financial Soundness Indicators database. The target for this index is set equal to the sample minimum of 0.21% and the low performance benchmark is the sample maximum of 8.65%

VI. Government indebtedness Index: captures the soundness and sustainability of government finances and serves as a predictor of future levels of taxation. The data used for this index is sourced from the CIA World Factbook and undergoes a logarithmic transformation to construct the index. The target level is set equal to the sample minimum of 17.0% and the low performance benchmark is the sample maximum of 262.50%.

4. **Quality of Life Index:** this sub-index captures the level of happiness and fulfillment in a society as well as the effect of natural environment factors on the Quality of Life of individuals. It is constructed as the geometric mean of the happiness index and the natural environment index.

[6] Latest data on annual consumer price inflation and 10-year government bond yields are used to calculate the real interest rate (real interest rate = nominal interest rate – inflation) for those countries missing data from the WDI.

[7] Long-term interest rates are obtained from OECD for the following countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, and Sweden. Real interest rates are calculated by subtracting inflation from the long-term interest rate.

a. **Happiness Index:** this data is taken from the World Happiness Report 2023, which calculates scores for happiness based on responses by people asked to evaluate the quality of their current lives on a scale of 0 to 10, averaged over the years 2020-2022. The indicator is presented in the logarithmic form. The target is set at the sample maximum, which is an average score of 7.80, and the low performance benchmark is set at the sample minimum of 4.04.

b. **Natural Environment Index:** this is calculated as the geometric mean of the following indicators, which measure the natural environment quality of a country and the effects of pollution on humans.

   I. **Air quality Index:** this index is calculated as the weighted average of PM2.5 exposure (55% weight), household solid fuels (40% weight), and ozone exposure (5% weight). The data is obtained from EPI 2022.

   II. **Water and sanitation Index:** captures the level of infrastructure providing people with safe drinking water and safe sanitation. This index is calculated as the weighted average of the two indicators with water weighing 60% and sanitation weighing 40% (after logarithms transformation). The data used is obtained from EPI 2022.

   III. **Biodiversity and habitat Index:** provides an insight into a country's protection of its ecosystem. The higher the score is, the more a country is capable to ensure a wide range of "ecosystem service" like flood control and soil renewal, the production of commodities, and spiritual and aesthetic fulfillment will remain available for current and future generations. This index is calculated as the weighted average of marine protected areas (20% weight), national terrestrial protected areas (20% weight), global terrestrial protected areas (20% weight), the species protection index (10% weight), the protected areas representativeness index (10% weight), the biodiversity habitat index (10% weight) and the species habitat index (10% weight). The data is obtained from EPI 2022.

   IV. **Environmental Factors Index:** this index is included due to the fact that the impacts of environmental factors will dramatically affect human health, water resources, agriculture, and ecosystems. The index is calculated as the weighted average of CO2 emissions per capita (1/3 weight), CO2 emissions per GDP (1/3 weight), CO2 emissions per electricity generation (1/6 weight) and renewable electricity (1/6 weight). Logarithmic transformation is applied for all indicators except for renewable energy. The data is sourced from the U.S. Energy Information Administration (EIA) and the WB's WDI 2022.

Constructing the Global Retirement Index

The four sub-indices are then aggregated into the Global Retirement Index by obtaining their geometric mean. The geometric mean was chosen over the arithmetic mean as the functional form of the index in order to address the issues of perfect substitutability between the different indices when using the arithmetic mean.

In this sense, Klugman, Rodriguez and Choi (2011) argue that the use of an arithmetic mean is problematic because it implies that a decrease in the level of one of the sub-indices can be offset by an equal increase in the level of another sub-index without taking into account the level of each variable. This poses problems from a welfare point of view. For example, a fall in the level of health cannot be assumed to be offset by an increase in the level of income on a one-by-one basis and at a constant rate. Thus, perfect substitutability does not apply when analyzing the effects of different factors on welfare.

The opposite alternative, full complementarity, would also be problematic, as it would assume that the only way of increasing wellbeing is by providing two components at the same time (Klugman, Rodriguez and Choi, 2011)[8], and so for example, an increase in the level of health would have no effect on welfare if it is not accompanied by an improvement in the other three sub-indices.

In this light, it makes sense to assume that there is some level of complementarity and some level of substitutability between the different parameters in the index. On one hand, a worsening of one of the indicators can be partially offset by an improvement of another one, but we can also assume that at least a basic level of health, financial services, material provision and quality of life is necessary in order to enjoy a good retirement.

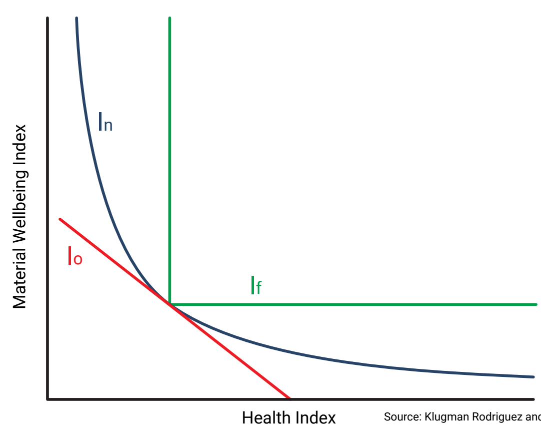
In the end, each of the 44 countries is awarded a score between 0% and 100% for their suitability and convenience for retirees. A score of 100% would present the ideal country to retire to, with a great healthcare system and an outstanding health record, a very high quality of life and a well-preserved environment with low levels of pollution, a sound financial system offering high rates of true return and a very high level of material wealth.

The chart graphically shows the three cases:

1. **Perfect substitutability (Io):** where the effect on the GRI score of a unit decrease in one of the sub-indices can be perfectly offset by a unit increase in another sub-index. For example, the GRI score will not change after a 1% decrease in the Health Index score if accompanied by a 1% decrease in the Material Wellbeing Index. This assumes that welfare remains unchanged if a decrease in the health of the population is matched by a proportional increase in their Material Wellbeing, which is problematic (e.g. If taken to the extreme it means that the welfare of a society with middle levels of income and good health could be equal to that of a very rich society affected by a deadly epidemic.)

2. **Perfect complementarity (If):** where the effect on the GRI score of a unit increase in one of the sub-indices is zero if not accompanied by an equal increase in all the other sub-indices. This means that a 1% increase in the Health Index would not increase the overall GRI score unless accompanied by a 1% increase in the other four sub-indices. (I.e. assumes that an increase in Health is not an increase in overall welfare unless Material Wellbeing, Finances and Quality of Life all increase concurrently.)

3. **Unit-elastic substitution (In):** this is the assumption made in the construction of the GRI by using the geometric means. It means that the sub-indices become perfect substitutes as their levels approach the high end of the scale (100%) and perfect complements as their levels approach the low end of the scale (0%). As a result, when a country scores very low on one or more sub-indices, an increase to a high score on another sub-index will result in a less than proportional increase in the overall GRI score. This is consistent with the assumption that at least a basic level of health, financial services, material provision and quality of life is necessary in order to enjoy a good retirement. The geometric mean also offers an advantage over the arithmetic mean and other aggregation methods in that the results do not vary due to differences in the scales in which the variables are measured.



Source: Klugman Rodriguez and Choi (2011)

[8] Klugman, Rodriguez and Choi (2011), "The HDI 2010: New Controversies, Old Critiques", Human Development Research Paper 2011/1, UNDP, New York.

Appendix B: Full Rankings

Rank	Country	Health Index	Finances in Retirement Index	Quality of Life Index	Material Wellbeing Index	Global Retirement Index
1	Norway	92%	70%	87%	84%	83%
2	Switzerland	88%	75%	85%	79%	82%
3	Iceland	88%	68%	87%	83%	81%
4	Ireland	88%	73%	79%	79%	80%
5	Luxembourg	89%	73%	81%	73%	79%
6	Netherlands	87%	66%	82%	82%	79%
7	Australia	88%	73%	79%	72%	78%
8	New Zealand	85%	72%	82%	70%	77%
9	Germany	86%	64%	80%	77%	76%
10	Denmark	86%	60%	89%	72%	76%
11	Austria	83%	62%	83%	72%	75%
12	Canada	85%	69%	76%	69%	74%
13	Finland	84%	63%	90%	64%	74%
14	Sweden	88%	65%	88%	60%	74%
15	Slovenia	80%	61%	71%	83%	73%
16	United Kingdom	82%	66%	80%	65%	73%
17	Israel	81%	68%	76%	64%	72%
18	Czech Republic	72%	63%	70%	82%	72%
19	Belgium	82%	59%	76%	71%	72%
20	United States	78%	67%	72%	66%	71%
21	Korea, Rep.	80%	73%	59%	71%	70%
22	Malta	78%	65%	61%	73%	69%
23	France	88%	55%	79%	58%	69%
24	Japan	91%	51%	69%	70%	68%
25	Estonia	67%	67%	72%	63%	67%
26	Singapore	82%	73%	54%	53%	65%
27	Slovak Republic	63%	61%	67%	67%	64%
28	Italy	81%	52%	73%	49%	62%
29	Portugal	74%	58%	67%	51%	62%
30	Cyprus	74%	53%	67%	56%	62%
31	Poland	62%	58%	61%	64%	61%
32	Lithuania	54%	65%	70%	51%	60%
33	Hungary	56%	55%	58%	70%	60%
34	Latvia	53%	61%	65%	49%	57%
35	Chile	66%	72%	63%	29%	55%
36	Greece	69%	49%	64%	29%	50%
37	Spain	81%	59%	75%	15%	48%
38	China	52%	64%	38%	42%	48%
39	Russian Federation	31%	49%	46%	59%	45%
40	Mexico	14%	63%	60%	45%	39%
41	Colombia	51%	62%	57%	11%	37%
42	Turkey	54%	47%	25%	28%	36%
43	Brazil	48%	58%	62%	9%	36%
44	India	4%	63%	4%	11%	10%

Color Scale

- 81% and above
- 71%-80%
- 61%-70%
- 51%-60%
- 41%-50%
- 40% and below

Disclosures

5901572.1.1