BLACKROCK®

UNLOCKING THE LONGEVITY DIVIDEND:

HOW LONGER LIVES ARE CHANGING RETIREMENT, INVESTING AND THE ECONOMY

JUNE 2015

Executive Summary

- Unprecedented increases in longevity are presenting equally unprecedented challenges but are also unlocking stores of human capital that can transform societies
- Examples of this so-called longevity dividend include better public balance sheets, healthier, more productive employees and increased income and investment
- Without action, swelling pensions will eat up ever more of nations' economic output (GDP) and the strain on these systems is already being felt by workers who are now expected to take on a large part of the burden of funding retirement
- A number of global corporations have implemented policies and changed their physical plants in ways that will capture the increased productivity of an experienced work force that is living longer

- Law and policy makers can do their part to create a pathway to realizing the longevity dividend by exploring solutions such as combining the use of traditional and defined-contribution pensions and having genuine debates about the practical long-term goals of pension plans
- Individuals, for their part, would do well to rethink retirement investing, finding out how much annual income their money can produce in retirement rather than focusing on the often misleading “nest egg” figure
- A refocus on income empowers individuals and their financial advisors to take steps that can help close their retirement savings gap

Unprecedented Change, Unprecedented Opportunity

"Global leaders across sectors have begun to recognize how longevity is transforming every aspect of 21st century life. The challenge society faces now is learning how to leverage this growing awareness in ways that will drive to positive solutions—both for personal financial security and for national economic growth."

— **Michael W. Hodin,**
Executive Director,
Global Coalition on Aging

"Longevity" and "crisis": two words that these days appear next to each other all too frequently in headlines.

That people are living longer is a fact with pervasive global consequences. It directly affects not only retirement planning, but also a wide range of policies and programs, the evolution of the workplace and all manner of economic opportunities.

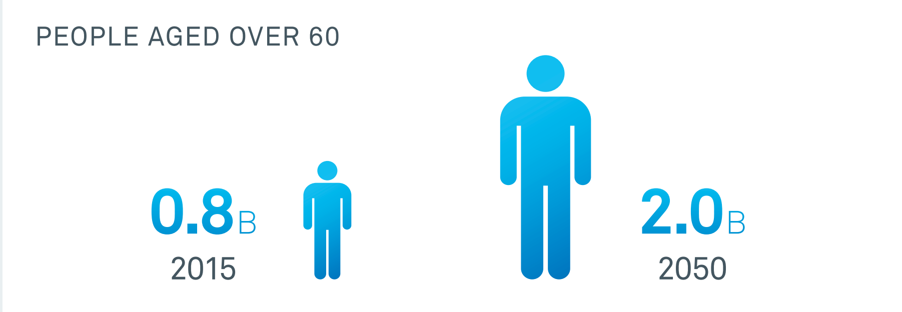
Longevity is also ushering in new social structures and creating unprecedented challenges—and they are not abstract: Aging is personal. While most of us hope to experience the new norms of longevity, how many of us are ready for the financial stress of paying for those extra years? How many of us are prepared for the potential health challenges that we may face as we live into our 80s and beyond?

But the opportunities are also real and unprecedented: Longer lives have created a vast pool of experience, capability and wealth that can become a driver for 21st century economic growth. Indeed, the transformative power of the generation now entering retirement should come as no surprise: Baby Boomers, born in the two decades following World War II, have reinvented every phase of life they have entered, often by design and sometimes through sheer force of numbers and economic clout.

"Societies that adapt to this changing demographic can reap a sizeable longevity dividend and will have a competitive advantage over those that do not," says Margaret Chan, Director-General of the World Health Organization.

While we at BlackRock recognize that what we do makes us prepared to offer insight on the implications for retirement investing, we think reaping the longevity dividend and averting crisis starts with fully understanding the massive demographic resource that is unfolding in front of us. From there, we'll need innovative thinking and action.

THE FACE OF THE FUTURE



Source: United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects. The 2012 Revision. Highlights and Advance Tables. 2013.

Unleashing Human Capital

Longevity is not simply a matter of a few extra years tacked on to the end of our lives. Longevity is a transformation that begins much earlier, most visibly in a late middle age that is more vigorous and active than it was for generations past.

Consider one recent U.S. survey that found that only 20% of people around traditional retirement age want to retire completely.[1] Of course, that doesn't mean these people want to work the way they always have. Many want flexible work arrangements or to start new careers and even new businesses.

This expectation of continued economic activity is a promising development for everyone. In addition to the personal, financial and health benefits that could be realized by continuing to work or begin new endeavors, older workers, with their knowledge and experience, are a tremendous resource to employers. They also represent substantial human capital potential that can become part of a new prosperity engine.

AN OPPORTUNITY FOR EVERYONE

The multitude of "capital" in all of us goes well beyond the scope of this article, but human capital in economic terms can be understood as the current value of future earnings. Creating the conditions that make it easier for older workers to continue to be productive increases their human capital. In a sense, it "creates" the potential for more future money for the individual to earn.

To be sure, pundits have posited that extending the working lives of older people means that there is less opportunity for younger workers. But the data doesn't back that up. In fact, Axel Borsch-Supan of the Max Planck Institute for Social Law and Social Policy found that "higher employment of older individuals is actually positively correlated with higher employment of the young, i.e., countries with a high prevalence of early retirement have, in general, higher unemployment rates and lower employment of the young."

"Arguably most troubling is that we fret about ways that older people lack the qualities of younger people rather than exploit a growing new resource right before our eyes: citizens who have deep expertise, emotional balance and the motivation to make a difference."

- Dr. Laura Carstensen,
Director of the Stanford Center on Longevity

1 Age Wave, Sun America, "Age Wave/SunAmerica Retirement Re-Set Study," Los Angeles: Sun America, 2011.

EMBRACE LONGEVITY TO POWER THE ECONOMY

Increased human capital can drive consumer spending and economic activity that will, in turn, drive growth for the entire economy. Specific benefits include:

Increased Income

The evidence of increased human capital shows up first exactly where you would expect it to: in increased income for individuals. With 20% of Americans aged over 65 now in the labor force compared with 13% in 2000 we have seen the real median household income in the U.S. for 65-69 year-olds increase 26% from 1993 to 2013, and that of 70-74 year-olds increase 23%.[2] And that extra income is a ...

... Big Bang for the Overall Economy

By 2032, Americans over 50 will control assets of nearly $14 trillion, equal to half of the U.S. GDP.[3] In the UK, the International Longevity Centre has calculated that increasing the number of workers over 65 by 2.6% per year could boost GDP per capita by as much as 6%, adding £1.7 trillion to the UK economy.[4] Similarly, in Japan, a study found that adding five more working years could raise per capita GDP 10% by 2025.[5]

Prolonged Investment Opportunity

Working longer can provide individuals additional time to convert increased human capital into retirement savings and possibly increase their exposure to the growth assets necessary to fund today's longer lives. Increased retirement savings may also result in increased spending levels once workers finally do retire.

Healthier Lives

Pew research suggests that those who work longer have fewer health concerns, such as depression, cognitive decline and serious illness after 65.[6] Moreover, studies indicate that improved emotional[7] and physical health, including delayed onset of dementia,may actually be another benefit of working longer.[8]

2 Joint Center for Housing Studies of Harvard University, "Housing America's Older Adults: Meeting the Needs of an Aging Population," 2014. **3** Oxford Economics, "The Longevity Economy: Generating Economic Growth and New Opportunities for Business," 2012. **4** International Longevity Centre-UK, "The Missing Million: Illuminating the employment challenges of the over 50s," 2014. **5** Nihon University "Japan Longitudinal Study of Aging," Nihon University Population Research Institute, 2005. **6** Tergesen, A. "Why Everything You Think About Aging May Be Wrong," The Wall Street Journal, 2014. **7** Kadlec, D. "Workers Who Delay Retirement May Be Happiest," TIME, 2013. **8** Dufouil, C., Pereira, E., Chene, G., et al. "Older age at retirement is associated with decreased risk of dementia," European Journal of Epidemiology, 2014. **9** Bureau of Labor Statistics, "Employee Tenure in 2014." U.S. Department of Labor. 2014. **10** Burtless, G. "The Impact of Population Aging and Delayed Retirement on Workforce Productivity." Center for Retirement Research at Boston College, 2013. **11** Schmiedek, F., Lovden, M., Lindenberger, U. "Keeping it steady: Older adults perform more consistently on cognitive tasks than younger adults," Psychological Science, German Institute for International Educational Research, 2013. **12** Hodin, M., Hoffman, M. "Snowbirds and Water Coolers: How Aging Populations Can Drive Economic Growth," SAIS Review vol. XXXI no. 2, Summer-Fall 2011. **13** Ewing Kauffman Foundation, Kauffman Index of Entrepreneurial Activity 1996-2012, 2013. **14** Encore.org. "Encore Careers: The Persistence of Purpose," 2014.

More Productive, Loyal Employees

Accommodating older workers accrues benefits to employers as well. Not only do older workers tend to be more loyal,[9] but workers aged 60-plus are also often more productive than those under 25,[10] and compared to 35 to 54 year-olds, their performance is more consistent.[11] For example, research on teams of BMW workers found that productivity increased with age because experience enabled employees to deal with unexpected problems and prevent mistakes.[12]

Improved Public Pension Balance Sheets

We will explore the potential effect increased human capital can have on pension systems in the next section. For now, let's point out that longer careers may mean more time for workers to pay revenue into government pension systems and, assuming an individual delays collecting their pension, a potentially shorter period drawing benefits—both of which can improve pension system balance sheets.

Opportunity for Social Impact

Many older workers turn to new business and social causes as a focus of their extended careers. In fact, 23% of new entrepreneurs in 2011-2012 were aged 55-64.[13] More than 4.5 million people aged 50-70 are already working in "encore" careers, with 12.6 million looking to join them within the next five years.[14]

> *"Those already working longer represent a life pattern that is more sustainable than trying to stretch and strain the 20th century model, where we load up all our education in the first part of life, work like a dog for the next 30 years, and are left with a balloon payment of leisure at the end."*
>
> **- Marc Freedman,**
> Founder and CEO, Encore.org

"SO WHAT DO WE DO?"

Tapping into the vast pool of potential human capital represented by older workers will require a strong partnership between private industry and government. The good news is that some notable companies are already stepping up to accommodate an older workforce, including creating environments that allow them to maximize their potential for productive, prosperous and healthier extended lives. Other areas for improvement will have to come from policy and lawmakers, including revamping tax and retirement savings regulations to realign them with the reality of longer working lives.

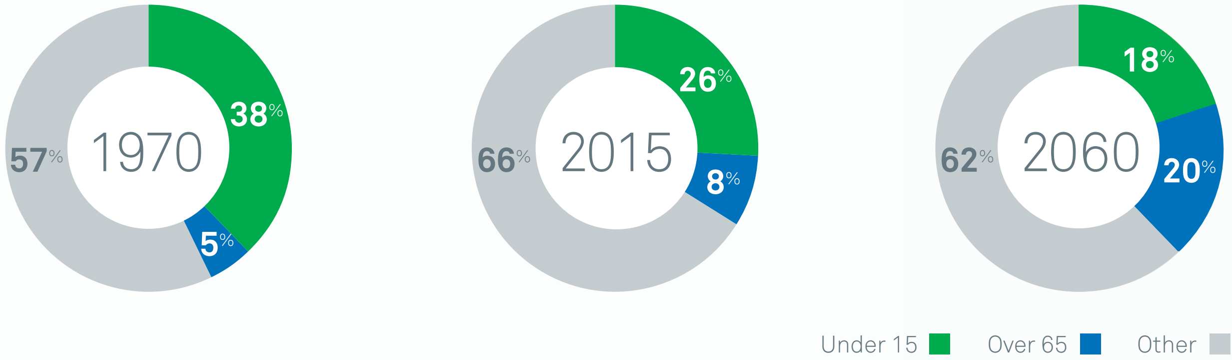
The 'Great Aging' and Retirement

When it comes to public pensions and medical plans, increased longevity is only part of the story. As scientific and medical breakthroughs have fueled longer lives, urbanization and modernization have contributed to declining birth rates. The result is the emergence of "super-aged" societies, top-heavy with older populations.[15] This is particularly challenging to the many government pension plans across the globe that are primarily funded by revenue collected from those currently in the workforce.[16] The resulting math is straightforward: Slowing population growth and longer lives mean fewer workers to pay for an increased benefits burden.

This aging of our global population is not just a trend, but a deep structural transformation that will endure at least through the middle of the 21st century. If we hold onto the kinds of assumptions that made sense in the 20th century that were fiscally sustainable then but increasingly unworkable today—nations will be expected to divert an increasingly large portion of their total economic output to retirement funding.

EMERGING "SUPER-AGED" SOCIETIES

Across the globe, people are living longer at the same time that the number of births are declining to sub-replacement rates. The result is the emergence of "super-aged" societies, top-heavy with older populations.



Source: United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects. January 2015.

15 United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects: The 2012 Revision, Highlights and Advance Tables, 2013. 16 OECD, "Annual Survey of Large Pension Funds and Public Pension Reserve Funds," 2013. 17 Pew Research Center, "Attitudes about Aging: A Global Perspective," 2014. 18 Social Security Administration, "Status of the Social Security and Medicare Programs," 2014. 19 BlackRock, "Investor Pulse Survey UK," 2015. 20 Butrica, B., Smith, K., Steuerle, E. "Working for a Good Retirement," Urban Institute Retirement Project Discussion Paper series, 2006. 21 Burtless, G., Aaron, H. Closing the Deficit—How Much Can Later Retirement Help? Brookings Institution Press, 2013. 22 Pew Research Center, "Attitudes about Aging: A Global Perspective," 2014.

AN INCREDIBLE STRAIN ON PUBLIC PENSIONS

Public pension expenditures are expected to consume about 15% of GDP by 2050 in several European countries.[17] China's Academy of Social Sciences projects an accumulated shortfall of as much as 800 trillion yuan in that country's national and local pension schemes by 2050—which is more than 14 times its 2013 GDP.

In the U.S., the trust fund for the Social Security national pension system is expected to be depleted by 2033, at which point current payroll tax revenue is expected to cover roughly three-quarters of benefits.[18] And, as BlackRock's Global Investor Pulse survey finds, workers around the world are recognizing the implications of the strain on pension systems. According to the study, only 1 in 6 workers in the UK believes the state pension will provide sufficient income to meet their needs when they retire.[19]

Increased human capital from older workers doesn't solve the problem of funding public pensions, but it may help extend the sustainability of the pay-as-you-go systems. Using the U.S. as an example of the potential relief longer careers could bring, the Urban Institute estimated that five years of additional payroll taxes would delay the projected shortfall in the national pension scheme—Social Security—by more than a decade.[20] Work by two Brookings Institution fellows in the U.S. finds that continuation of the current trend in delaying retirement could boost general government revenue by as much as $2.1 trillion over the next three decades and decrease Social Security and Medicare expenditures by as much as $600 billion.[21]

CHALLENGES IN THE WORKPLACE

Many traditional employer defined-benefit pensions also face challenges, with longer than anticipated benefit payouts and investment volatility. Like government pension programs, employer defined-benefit plans were created in an era when life expectancies were much shorter and investment assumptions were more optimistic. Today, many corporations and government entities find themselves struggling under the weight of the promised benefits.[22]

In many places including the U.S., UK, Australia and countries across Latin America, workplace defined contribution (DC) plans, in which workers contribute earnings towards retirement, are increasingly taking on a major share of the retirement burden. Unfortunately, there are gaps in the coverage provided by today's DC system. Many people in the generation caught in the transition from defined benefit pensions to the DC system are failing to generate the savings they need. This is particularly true in the U.S. where the median savings pre-retiree workers (ages 55-64) had in DC plans was found to provide only $6,400 in annual retirement income.[23] Furthermore, DC plans remain inaccessible to some and underutilized by many. In the U.S., only 49% of workers participated in a retirement plan of any kind,[24] and BlackRock's Global Investor Pulse survey finds that in the UK, workplace pensions benefit only a third of workers currently entering retirement.[25]

REDEFINING DEFINED CONTRIBUTION

Defined contribution plans have been around for several decades, but we have seen the greatest evolution and expansion of these plans over the past 20 years. In many places, the trend of aging populations has raised the question of what must be done to drive the next generation of DC plans. Here's a list of what we might consider for U.S. DC plans:

Strengthen DC

- Maintain and expand retirement savings tax advantages for workers.
- Increase automatic enrollment and contribution rates in employer-sponsored or individual pension plans.

Broaden Coverage

- Develop public/private partnerships that target workers who typically fall outside the current workplace plan system.
- Consider mandating participation in retirement savings plans similar to Chile or Australia.
- Increase incentives for small business owners to offer plans.

Clarify the Outcomes

- Offer guidance on income calculations and income solutions within DC plans.
- Seek new investment models that help individuals manage the longevity risk that was once managed by pension plans.

23 BlackRock, "U.S. Investor Pulse Survey 2014," 2014. **24** ERISA Advisory Council, U.S. Department of Labor, Hearing on: Lifetime Participation in Plans, 2014.
25 BlackRock, "Investor Pulse Survey UK," 2015.

“SO WHAT DO WE DO?”

All of these developments are creating an opportunity to take a close look at the entire retirement system—public and private—to ensure that changes work together to meet the needs of retirement in the 21st century. On the public side, leaders should take action to improve the balance sheets of public pension plans. This may entail boosting revenue flows into the systems, which admittedly would mean swallowing the bitter pills of either increased taxation or delayed benefits or both. Another step could see combined use of both traditional, defined-benefit and DC plans. These actions should be paired with a debate about the long-term goals of the plans. At the same time, we need to take action to further utilize the benefits that the DC system offers, while also exploring ways to evolve the system. As the retirement crisis grabs an increasing share of the world’s attention, we have a once-in-a-generation opportunity to advance new ideas and thinking.

Rethinking Retirement Investing: Beyond the Nest Egg

THE RETIREMENT INCOME GAP IN THE UNITED STATES

ALL PRE-RETIRED AGES 55–64

$112,500

TOTAL RETIREMENT SAVINGS

$6,700* ESTIMATED ANNUAL INCOME

$34,600 INCOME GAP

$41,300 DESIRED ANNUAL RETIREMENT INCOME

Sources: Retirement savings and desired income from the Baby Boomer Reconnect Study (March 2015) in median dollars for Americans ages 55-64. Estimated annual retirement income is based on the CoRI™ Retirement Index 2024 for a pre-retired 55 year-old. CoRI estimates are as of 4/13/15, and are subject to change over time. Retirement is assumed to begin at age 65.

Over the last few decades, the generation that we now recognize as the leading edge of the longevity wave—the Baby Boomers—has remade work, social norms and institutions for whatever phase of life they happened to be in. They have also remade investing. Participation in the financial markets, especially through use of mutual funds, is far more wide spread than when this generation entered the workforce. During most of that time, investing focused on wealth accumulation, or in colloquial terms, on building a nest egg. Now that we are increasingly dependent on our own savings for retirement, we need to ask: Can the nest egg concept itself meet the needs of 21st century retirement investing and planning? Do we have the tools that will empower people to capitalize on their personal longevity dividend?

Consider the example of a 55 year-old with $500,000 in her retirement savings account. To her, $500,000 seems like a lot of money. Is it? She simply has no way to judge. If she uses the past as her guide, she is likely to seriously underestimate her needs. Not only is she likely to live longer, her savings may have to pay for new and different healthcare demands, and she may have to assume financial responsibility for elderly parents. She may also want to explore the new possibilities that active aging brings, from travel to housing and entrepreneurship to volunteering.

This tension between how much to save and retirement goals has been born out in particular in the U.S., where BlackRock's Global Investor Pulse survey found that, among U.S. pre-retirees (ages 55-64), there is a significant gap between income expectations and what accumulated savings can provide.[26] In the UK, the story is similar. As early as 2004, the UK Pension Commission led by Adair Turner identified the challenge to encourage savings, saying, "Most people do not make rational decisions about long-term savings without encouragement and advice." If pre-retirees have a better understanding of how much they need to save to produce the retirement income they desire, they could better plan to meet those outcomes.

INSTITUTIONAL LESSONS, INDIVIDUAL BENEFITS

Contrast an individual's experience and investment ability with the way a defined-benefit pension plan manages investments. Pension fund managers have a significant advantage over individuals managing their own retirement: They are armed with a sufficiently large pool of people and an actuarial table to guide them. These two tools allow pension fund managers to predict, with a high degree of certainty, the mortality rate that allows them to project the benefits they will need to pay over the long-term and then manage their portfolios to provide those benefits.

26 BlackRock, "U.S. Investor Pulse Survey 2014," 2014.

Individuals have no way of accurately predicting how long they will live. That in turn means they have no way of knowing how long they need their nest egg to last, leaving them to navigate their retirement investing and spending with a high degree of uncertainty. And today's longer lives increase the uncertainty, especially since many of the tried-and-true approaches to retirement spending were developed when retirements were shorter and the markets very different.

BlackRock is exploring how we can bring some of the concepts used in institutional pension management into the individual investment toolkit. Part of that is the profound shift we are beginning to see in thinking about retirement investing, particularly in the increased focus on individual retirement investing outcomes measured in terms of retirement income estimates. The more closely these estimates can reflect the factors used by pension funds and annuity providers, the more powerful they can be in retirement planning, helping drive clarity about the combination of savings, investment and spending strategies needed to achieve suitable retirement income.

Let's return to the example of a 55 year-old U.S. investor. Similar to the way a pension fund manager wants to understand his payment obligations, she wants to understand her savings in terms of retirement income. To do this, she could use the BlackRock CoRI™ Retirement Indexes, which use annuity pricing factors to estimate the cost for each dollar of annual lifetime retirement income (beginning at age 65). Assume that she checks the appropriate index and finds today's cost per dollar of future annual income is $16.25. Then, her current balance could be divided by that cost, and she could estimate that her $500,000 savings could provide more than $30,000 in annual retirement income. She now has a much clearer basis by which to make decisions about how much to save, how much investment risk to take, even whether to adjust her projected retirement spending to achieve her objectives.

"SO WHAT DO WE DO?"

We believe that by focusing on specific retirement outcomes and understanding the factors required to meet different retirement goals, pre-retirees can gain clarity and confidence about the path ahead. In fact, we believe that all three of the themes we have discussed here—unleashing the power of longevity's human capital surplus, acting on the pension systems, and creating an outcome-oriented approach to retirement investing—should help free people to embrace increased longevity.

Closing The Gaps: We Can Do This

"Let's make longevity a blessing, not a curse."

- Laurence D. Fink, Chairman and Chief Executive Officer of BlackRock

BlackRock Chairman and Chief Executive Laurence D. Fink has said that the world is "in denial" about the profound retirement challenges it faces. He's also calling for all of us—governments, institutions, employers and people across the world—to find ways to work together to make longevity "a blessing, not a curse."[27]

Increasingly, we are seeing signs that countries are waking up from denial and are now willing to work to ensure that longer lives are productive, prosperous and an extraordinary resource to benefit all of society. Across the globe, people are focusing on these opportunities:

- The World Economic Forum has targeted aging as a seminal global trend with impact on economic growth and company competitiveness[28]
- The OECD is promoting policies to shape the 21st century "Silver Economy" with the vision to improve lives across all generations[29]
- The United Nations has focused on addressing the overall approach to population aging through recent reports[30]
- The European Union has committed to the European Innovation Partnership on Active and Healthy Ageing (EIP on AHA) to help match longer life spans with longer health spans[31]
- In Japan, both the public and private sectors are finding growth in the "Silver Economy"[32]
- Global businesses have aligned with the OECD to pursue the "silver economy" as a pathway for growth[33]

27 Yoon, A. "BlackRock's Fink Warns of U.S. `Retirement Crisis'," The Wall Street Journal, 2013. **28** Global Agenda Council on Ageing Society, "Global Population Ageing: Peril or Promise?" World Economic Forum, 2012. **29** OECD, "The Silver Economy as a Pathway for Growth, Insights from the OECD-GCOA Expert Consultation," 2014. **30** UNFPA and HelpAge International, "Ageing in the Twenty-First Century: A Celebration and a Challenge," 2012. **31** Innovation Union, European Innovation Partnership on Active and Healthy Ageing. European Commission, 2013. **32** Nihon University "Japan Longitudinal Study of Aging," Nihon University Population Research Institute, 2005. **33** OECD, "The Silver Economy as a Pathway for Growth, Insights from the OECD-GCOA Expert Consultation," 2014.

To achieve this longevity dividend and unleash the increased human capital potential older workers represent, we must start with a deep commitment to asking the right questions and rethinking systems, programs, traditions, methodologies and paradigms. And a commitment to invest in a different future —in the broadest, most inclusive sense of that word. We need public and private partnerships that create incentives for embracing older workers, and public policies that recognize the growing trend toward later retirements.

BlackRock is committed to uncovering the challenges and opportunities we have outlined here. We will work with like-minded partners like the Global Coalition on Aging (GCOA) to empower the emerging super-aged society to make longer lives everything they can be. We'll do that by shedding light on retirement trends that are impacting society and suggesting actions that can be taken to deliver on the blessings of longer life.

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- Sophisticated risk and portfolio analytics

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