Most advanced economies face shrinking workforces, while many young countries face explosive growth.

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The Global Aging Program at the Stanford Center on Longevity focuses on the economic and political implications of longevity. The program specifically addresses the risks and opportunities of population age shifts around the world. Understanding the implications of these Population Age Shifts will be critical for effective policy making.

The Stanford Center on Longevity is working to transform the culture of human aging. The Center studies the nature and development of the entire human life span, looking for innovative ways to use science and technology to solve the problems of people over 50 and improve the well-being of people of all ages. To inspire change of this scale, the Center brings together the best minds in academia, business and government to target the most important challenges and solutions for older populations. The Center was founded by two of the world’s leading authorities on longevity and aging, Stanford professors Laura L. Carstensen, PhD, and Thomas Rando MD, PhD, and received its initial funding from Texas investor Richard Rainwater.

Adele Hayutin, Ph.D., Senior Research Scholar and Director of SCL’s Global Aging Program, is a leader in the field of comparative international demographics and population aging. Dr. Hayutin combines broad knowledge of the underlying data with the ability to translate that data into practical, easy to understand language and implications. She has developed a comparative international perspective that highlights surprising demographic differences across countries and illustrates the unexpected speed of critical demographic changes. Previously she was director of research and chief economist of the Fremont Group (formerly Bechtel Investments) where she focused on issues and trends affecting business investment strategy. Dr. Hayutin received a BA from Wellesley College and a Master’s in Public Policy and a Ph.D. in economics from the University of California at Berkeley.

The 2008 Revision

Population in millions by five year age bracket from 0-4 to 100+. Males on left, females on right.

Population Shift to Older People: Pyramid to Cube

As fertility falls and longevity increases, a country’s age profile changes from a pyramid with a broad base of young people to a cube with a more even distribution across age brackets. If fertility remains low, the population will become top-heavy with older people.

The share of older people (65+) is increasing almost everywhere, but at different rates depending on changes in fertility and longevity. These population age shifts have profound impacts on everything from a country’s work-force growth and economic prospects to public and personal budgets, security risks, cultural institutions and family structures.

Oldest Countries: Working-age populations shrink; age structures become top-heavy with old people.

- Fertility has been below replacement level for the last 15-20 years.
- Working-age population (15-64) is shrinking.
- Declining work-force growth combined with the increasing fiscal burden of retirees threatens economic growth and current living standards.
- Selected countries: Germany, Greece, Italy, Japan, Singapore, South Korea.

“Middle-Age” Countries: Work-force growth continues but at a slower pace; age structures become cube-like.

- Fertility rates are approaching or already below replacement rate.
- Work-force growth will be slow or moderate, eventually becoming negative in some countries.
- Sustained economic growth will require productivity gains to offset slower work-force growth.
- Selected countries: Australia, Brazil, Canada, China, Ireland, Mexico, Thailand, Tunisia, United States, Vietnam.

Young Countries: Rapid growth in working-age population threatens economic and political stability.

- Fertility rates are falling but still relatively high; age structure remains pyramidal.
- Working-age population will continue to grow rapidly, though the pace will slow.
- “Youth bulges” increase the risk of violent conflict; the challenge is to provide work for a large share of young adults.
- Selected countries: Afghanistan, Bolivia, Nigeria, India, Iraq, Pakistan, Philippines, Uganda.

Population, 2010

Selected countries:

- Germany
- Greece
- Italy
- Japan
- Singapore
- South Korea
- Australia
- Brazil
- Canada
- China
- Ireland
- Mexico
- Thailand
- Tunisia
- United States
- Vietnam
- Afghanistan
- Bolivia
- Nigeria
- India
- Iraq
- Pakistan
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Global Aging
Share of Population Age 65 and Older

Dramatic and unprecedented shifts toward older age brackets are occurring at vastly different rates around the world. Understanding these differences is critical for developing policies that effectively address the economic and geopolitical challenges of population aging.

1. Declining Fertility Rates
Fertility has decreased worldwide, but at different rates.

2. Rising Median Age
The pace of aging varies dramatically; many countries face steep gains in median age.

3. Declining Potential Support Ratios
As countries age, the ratio of potential workers (15-64) to retirees (65+) declines, increasing the fiscal burden on workers.

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The 2008 Revision

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Data Source: United Nations, World Population Prospects. The 2008 Revision Medium Variant Forecast

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