

ALTERNATIVE INVESTMENTS FOR
GLOBAL MACRO INVESTORS



THE
ESOTERIC
INVESTOR

VISHAAL B. BHUYAN

The Esoteric Investor

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*Alternative Investments for
Global Macro Investors*

Vishaal B. Bhuyan

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*This book is dedicated to all my cousins,
especially Shivam Shah.*

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About the Author

Vishaal B. Bhuyan is Founder and Chief Investment Officer of Nariman Point, LLC, a New York-based investment management firm focusing on demographic-driven instruments, with expertise in insurance and longevity/mortality instruments. Prior to launching Nariman Point in early 2011, Bhuyan was an independent consultant providing family offices, private equity funds, and hedge funds with market insight and quantitative analysis on the life linked asset class. During that time he published “The Wave Report,” a monthly newsletter to clients providing a firsthand market perspective on the life markets.

Bhuyan is the author and editor of *Life Markets: Trading Mortality and Longevity Risk with Life Settlements and Linked Securities* and *Reverse Mortgages and Linked Securities: The Complete Guide to Risk, Pricing, and Regulation*. He has spoken at various hedge fund and insurance conferences in Tokyo, Vienna, New York, Orlando, London, Nice, Monaco, and Hong Kong. His book *Life Markets* was referenced in the U.S. Securities and Exchange Commission report on life settlements.

Bhuyan graduated from the University of Pennsylvania in 2005 with a degree in History and Sociology of Science, where he was vice president of the Phi Delta Theta fraternity.

Contributing Authors

Richard Ellis is one of America's leading marine conservationists and is generally recognized as the world's foremost painter of marine natural-history subjects. His paintings of whales have appeared in *Audubon*, *National Wildlife*, *Australian Geographic*, *Encyclopedia Britannica*, and numerous other national and international publications. His shark paintings have been featured in *Sports Afield*, *Audubon*, *Sport Diver*, *Nautical Quarterly*, *Reader's Digest*, and his own *Book of Sharks*, now in its seventh printing and called the most popular book on sharks ever written. Ellis has been asked to advise on many museum installations. In 1978 he completed a 35-foot-long whale mural for the Denver Museum of Natural History. The Smithsonian Institution selected 106 of his paintings to form a traveling exhibit of the marine mammals of the world. These paintings are now in the permanent collection of Whaleworld, a museum in Albany, Western Australia. In 2005, in conjunction with the publication in Italian of his *Encyclopedia of the Sea*, Ellis was given a one-man show of his drawings at the Museo del Mare in Genoa. Ellis is a special adviser to the American Cetacean Society, a member of the Explorers Club, and a research associate at the American Museum of Natural History. From 1980 to 1990, he was a member of the U.S. delegation to the International Whaling Commission.

Joseph L. Shaefer, B Gen, USAF, Ret., has had a varied and unique career, both military and civilian. He entered active-duty service in Army Psychological Operations in 1970. He served as a Special Forces A-Team XO and CO from 1971 to 1976, first with the 5th, and then with the 20th (NG) Special Forces.

He joined the USAFR as an intelligence analyst and command briefer, and later he served as a HUMINT (human intelligence) officer, an interrogator and strategic debriefer, and an interrogation and debriefing instructor. Later assignments included the NATO, South America, and Southeast Asia country desks; commander of the Mobile Interrogation Teams in operations Desert Shield and Desert Storm; air attaché to Rangoon, Burma; commander of the language detachment at the Presidio of Monterey; and senior political/military

affairs officer, Office of the Deputy Chief of Staff for Air and Space Operations, Headquarters U.S. Air Force, Washington, D.C.

Positions as a general officer include service as the reserve chief for the A2 and the acting A2 during Operation Allied Force (Kosovo) at Air Combat Command; a member of the AF Intelligence Crisis Action Team after 9/11; reserve chief for the J2, U.S. Strategic Command; and reserve chief for the Director, Defense Intelligence Agency.

In his civilian career, Shaefer entered the securities industry in 1972 and later founded his own brokerage, which was subsequently bought by Charles Schwab & Co. He was a regional and senior VP at Schwab until he retired to found Stanford Wealth Management, an SEC-registered investment firm. He was one of the charter members of the CIA's Project Prophecy regarding the use of market intelligence (MARKINT) to discern possible terrorist activities, and he contributed to a number of research papers as author or editor.

Shaefer currently is professor of global and security studies (counterterrorism, the intelligence community, illicit finance) at American Military University/American Public University. After being awarded his undergraduate degree in international relations at UCLA, he earned a master's in military studies with honors in unconventional warfare from AMU/APU.

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Introduction

The Esoteric Investor is the product of research I did for my own investment management firm, Nariman Point, LLC. My firm focuses on making investments that are demographic in nature and completely unusual. This book is not meant to offer any stock tips, or investment philosophies or anything of the sort. It is simply a 10,000 foot view at a variety of interesting opportunities that exist due to dramatic changes occurring around the world. One example is finding opportunities that relate to aging populations in developed nations. I have spent the past six years focused on the *life markets* (see my biography). These markets are composed of longevity and mortality risk instruments such as life settlements, reverse mortgages, longevity reinsurance, and, in some cases, extreme mortality bonds. On one level these products are all linked to insurance, but on a macro level they are about a watershed time in human history when many of us will live to be 100 years old, and the economic impact that fact carries. As populations live longer they create a drag on retirement systems, which needs to be addressed. Unfortunately, as the baby boomer generation begins retiring (baby boomers make up almost one-fourth of the U.S. population), longer-living retirees can destroy the fiscal soundness of governments and companies. I believe we are headed for a violent and catastrophic pension collapse in the Western World as well as in Japan. These topics are covered in detail in this book. The theme of demographics is an important one, and the word is changing before our eyes. Markets have become overcrowded and volatile due to the modern era of rapid dissemination of information. Furthermore, understanding and predicting where regulation and taxation are going in the U.S. seems as difficult a task as predicting where regulation and taxation are going in India, or in another

emerging economy. The end result of all this is that the vast majority of professional and retail investors are chasing the same few easy ideas, which makes most of these ideas *not* interesting. So, the real purpose of this book is to offer something a bit different in the way of analysis. I don't make any stock recommendations. Stocks may be mentioned to highlight that some equities do exist that pertain to the topics discussed in the book; however, these are not recommendations, and I probably do not own any of them.

For years I have been interested in a few investments: fisheries, water, and human demographics. Although I made the last one into a career, I never gave up reading about and researching the other two. Tuna was interesting because I often came across headlines such as "Tuna sells for \$400,000 in Tokyo." I never understood why there was not a standardized futures contract that allowed for the hedging of tuna prices. It turns out that there is a form of tuna futures contract, but not in the same sense. Tuna also started piquing my interest when I learned that certain types of bluefin tuna were nearing extinction due to overfishing. Generally, aquaculture (the practice of breeding and farming fish) became of considerable interest to me because I found it shocking that the majority of commercial fishing that occurs today is for the purpose of catching smaller fish to feed raised fish such as salmon and tuna. Simply, we eat mostly farmed fish that is raised for consumption by corporations, not fish caught in the wild by a guy wearing a yellow raincoat. Then I learned about the Tuna Wranglers and Tuna Kings of Australia, who were making millions of dollars catching and trapping large schools of bluefin and selling them to the Japanese. Coupled with seeing Tsukiji fish market in Tokyo for myself, I had to take this further.

Regarding water, my interest stemmed from my frequent trips to India growing up and even recently, although India has changed quite a bit during that time. What I never understood was that in nations such as India—countries that need water more than anyone (over 1 billion people)—water was treated the absolute worst. It was highly polluted, contaminated, and filled with waste. In Hinduism, the concept of restricting beef in the diet arose from cherishing the cow, which provided milk to the people. In the same way, water is the absolute and literal lifeblood of the human race, yet it is abused and

misused, especially in India. When I began to explore water as a commodity, I reached a tentative conclusion that perhaps that this misuse of our water resources can be attributed to a mispricing of water. Water is considered “free” right now and therefore is treated as if it belongs to no one.

With help from my coauthors and researchers Richard Ellis, a highly respected marine conservationist, and Joseph Shaefer, a retired USAF Brigadier General/Special Forces-turned-wealth manager, I delved into these interesting topics of the plight of the bluefin tuna and how valuable water really is. In addition, this book covers topics such as longevity and mortality risk, which, again, is my specialty. I sincerely hope that you enjoy reading this book as much as I enjoyed putting it together.

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1

Building the Demographic Framework

Demographics are one of the most important factors when analyzing the future economic prospects of any geographic area. Nations such as India have large young populations (only 5.2% of India's population is older than 65) and therefore have a tremendous amount of future potential due to a growing labor force and a growing pool of consumers. In contrast, nations such as Japan, where 22% of the nation is older than 65, face a serious threat to their economy and will suffer from a shrinking labor force for the next several decades. In the U.S., more than 12% of the nation is over 65; in the UK, that number is 16%. Moreover, since 2006, an astonishing 330 people turn 60 every hour in the U.S. By 2050, Korea will have lost roughly 38% of its population, and Japan and Russia will have lost over 20%.

It is important to consider that although growing and large populations are important for economic growth, adequate infrastructure is required to support them. In India, for example, although the demographics are promising, the nation still faces unimaginable poverty, and basics such as fresh water are scarce. Figure 1.1 illustrates India's rise as the most populated nation in the world by 2030, ahead of China, which is currently at an optimum demographic point. Hopefully by that time, the nation will have taken steps toward adding sufficient schools, hospitals, highways, roads, and other public utilities to accommodate the extra bodies. The country must also address the high illiteracy rate, which currently stands at roughly 61% according to the CIA World Fact Book. Although this rate is low, in 1947, when India achieved independence, only 12% of the nation was literate. The point is that demographics are the fundamental drivers of economies.

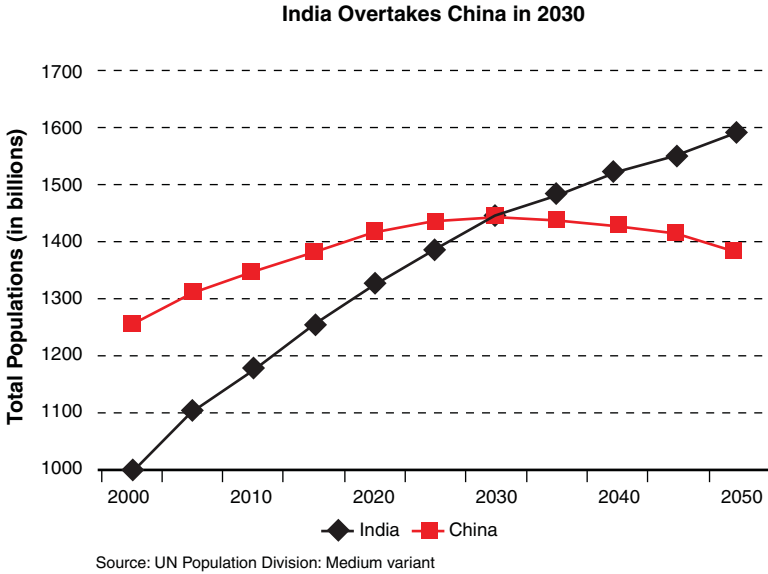


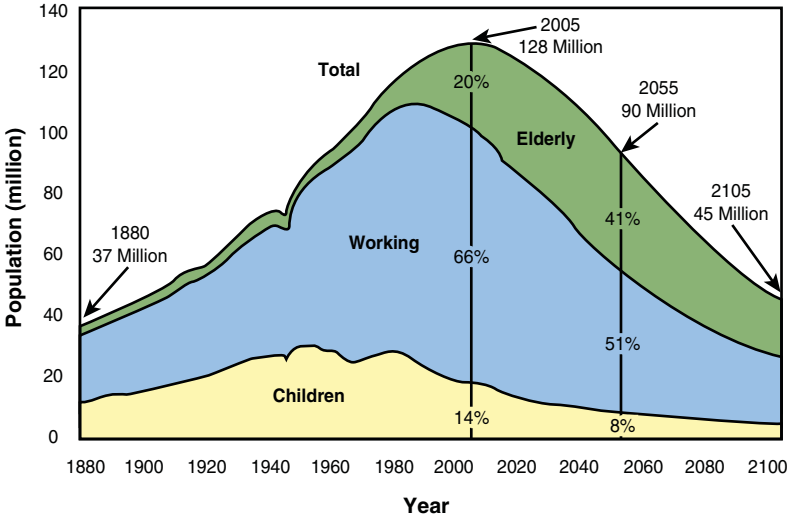
Figure 1.1 India's population versus China's

Source: United Nations

Japan, which is referenced quite a bit in this book, suffers from a crippling demographic decline. According to several government sources, and as illustrated in Figure 1.2, Japan is at peak population as of 2010. This creates a number of issues for the nation. The shrinking workforce will face difficulties in manufacturing and exporting products for the West at the same pace as it once did. This is only one of the issues facing the country as a result of its demographic problem. Japan is discussed in further detail later in this chapter and the next.

Aging populations have historically been a positive sign of economic prosperity and flourishing developed societies. However, from an economic standpoint, longer-living populations can put a tremendous strain on retirement and health care systems:

In the U.S., social security and Medicare currently account for roughly 7% of the GDP, but within the next 25 to 30 years these programs will account for nearly 13%, essentially the majority of the entire federal budget. Proposals have been made to prevent these disasters, such as opening borders to



Source: Ministry of Internal Affairs and Communications, Statistics Bureau, *Census*, NIPSSR (2006), Population Projection for Japan: 2006-2055.

Figure 1.2 Japan's population 1880–2100

immigrants to prop up the work force, privatizing government programs, and increasing the retirement age from 65 to 71. These proposals, however, have failed to adequately address the matter and gain widespread acceptance. Plans have been made to extend the retirement age by two years in some countries over a 20-year period, but this is simply not enough. The retirement age should be at least 71 in order to adjust for dramatic increases in life expectancy over the past 100 years relative to a static 60-to-65-year-old retirement age (in some places 55), which has been in place since as far back as the 19th century.

Mass immigration will cause a number of national security problems, and people are simply not fungible assets. Skill and education level must be comparable for immigrants to take on many of the skilled labor jobs the baby boomers will leave behind. Moreover, the sheer number of immigrants necessary to counteract the baby boomer phenomenon would be unthinkable.¹

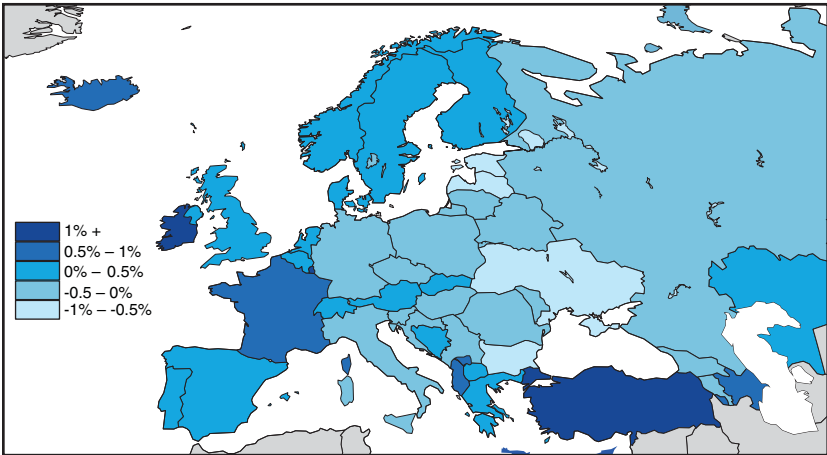


Figure 1.3 Countries' population growth or decline in Europe 2009

Source: Zonu.com

Generally, developed nations are aging rapidly, and their leaders must provide for the increase in health and retirement costs to care for the “gray” population (see Figure 1.3). But even in booming, headline-making nations such as China, demographics are an enormous dark cloud over their economies. China’s one-child-per-family policy poses an enormous issue in terms of the nation’s dependency ratio, or the ratio of younger workers supporting the elderly (see Figure 1.4). China is currently in a “sweet spot” of dependency ratios; however, every year moving forward China’s elderly will become a larger percentage of the overall population. According to the Chinese government, the nation prevented roughly 250 million births between 1980 and 2000. These 250 million additional young workers could have helped carry the additional financial burden of aging and retired workers. The low dependency ratio has helped China reduce its economic drag by limiting the number of children who needed to be cared for. However, this policy is shortsighted in the long term. It is projected that the number of Chinese between the ages of 20 and 24 will drop from 125 million in 2010 to approximately 68 million by 2020, or nearly a 50% decrease.² China also suffers from a severe gender imbalance because families in rural areas prefer males to females due their ability to generate income or work on the family farm. Because of sex-specific abortions, researchers believe that over

the next 15 years, there will be roughly 30 million more marriage-age men than women. And we all know that single, sexually frustrated men are a recipe for disaster! Wang Guangzhou, a Chinese researcher for the *Global Times*, commented: “The chance of getting married will be rare if a man is more than 40 years old in the countryside. They will be more dependent on social security as they age and have fewer household resources to rely on.”³

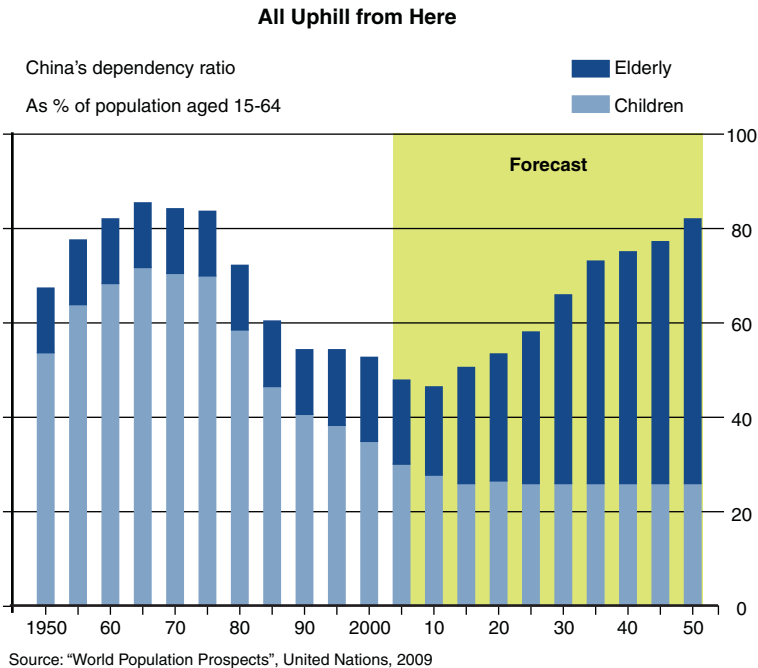


Figure 1.4 China dependency ratios

Source: United Nations 2009

The lighter bars in Figure 1.4 provide some evidence that dependency ratios, especially as a result of sex-specific abortions, have led to China's explosive economic growth. Starting in 2015, the darker bars indicate a dramatic spike in the elderly dependency ratio, which will continue into 2050. Because fewer children are being born, it costs less money to run a family, and therefore more money stays in the economy. The problem now is that those fewer children need to support all the older people who are retiring. The economic result is yet to be seen.

Again we can see that demographics may be used to predict the direction of a particular nation or economy. Granted, China's dependency ratio does not provide much insight into where the Shanghai Stock Exchange (SSE) will trade over the next week, month, year, or even five years. But over the next 10 or 20 years, it provides an excellent picture of the nation's position relative to other nations. India, which many believe is 10 or 20 years behind China at the moment, does not have a large future dependency ratio to worry about. Therefore, India maybe primed to surpass China in economic output over the next 50 or 100 years.

It is no coincidence that major growth in the U.S. coincided with the aging of the baby boomers, the largest generation in U.S. history. Certain market pundits, such as futurist Harry S. Dent, associate peak spending of families with the performance of the U.S. equities market. Figure 1.5 illustrates the various spending habits of different age groups within the U.S. Not surprisingly, people between the ages of 46 and 50 spend the most. They probably are supporting their two teenage, college-bound children, and maybe even their parents. Notice the sharp decline in spending after the children have moved out and entered the working world.

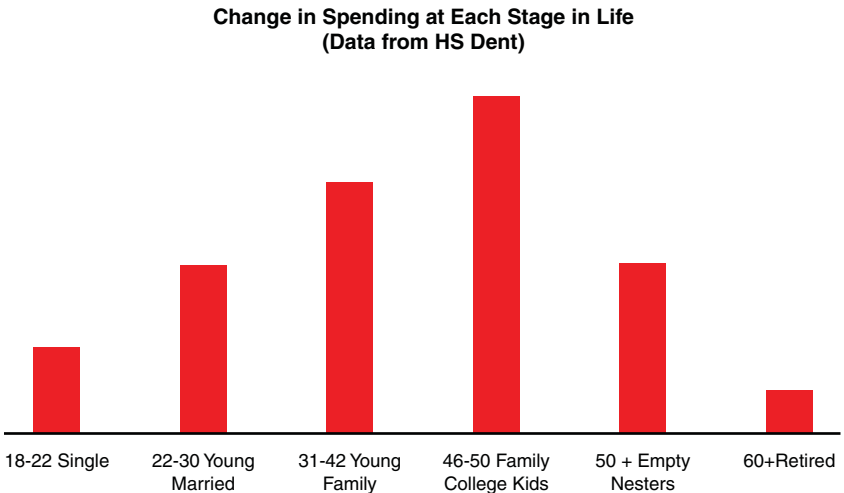


Figure 1.5 Spending life cycle

Source: HS Dent

Figure 1.6 illustrates the concept of “peak spending” as it relates to the performance of the Dow Jones Industrial Average (DJIA). The thick line represents the DJIA, and the shaded area represents the number of people at their peak spending phase of life. Dent theorizes that one of the major reasons for the 2008 market downturn was a decline in peak spending. Furthermore, Dent cites this drop in peak spending as indication that a bear market will persist over the next two decades.

The Spending Wave-Births Lagged for Peak in Family Spending

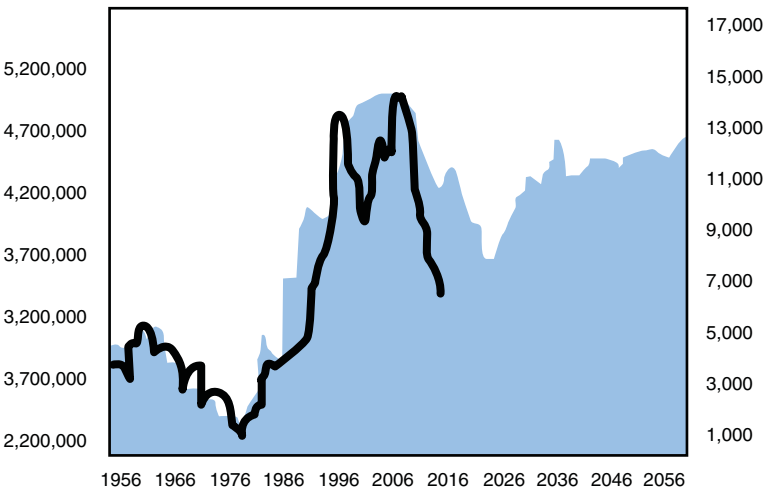


Figure 1.6 DJIA versus peak spending

Source: HS Dent

In summary, demographics are an important element in investment analysis. A 2011 report released by PriceWaterhouseCoopers (PWC) projected that the G-7 economies will be replaced by emerging markets by 2032. The report estimated that by 2028, India will eclipse Japan in economic size, and Brazil will surpass Germany. China has already passed Japan to become the second-largest economy in the world. This sets the stage for a dramatic shift in global power from West to East and old to new. However, historically India and China have been the wealthiest and most powerful nations. Western prominence starting in the late 18th century was merely a blip in

the context of human history. However, do not discount the importance of the unknown. Any competent actuary will admit that actuarial science and population projections are never entirely accurate. On the other hand, you cannot ignore the baby boomer population as they begin retiring. Nations and corporations must be prepared for any swing in population size.

Economic Implications of Longevity and Mortality Risk

Given that demographics play such a significant role in a nation's economic growth, it is easy to see why corporations must pay close attention to not only the demographic makeup of their customers, but also their employees. Pension obligations, if mismanaged or miscalculated, can be the downfall of any otherwise fundamentally sound business. This section examines two major demographic risks facing governments and corporations: longevity risk and mortality risk.

Longevity risk is the risk that a group of people, whether employees at XYZ Corp. or U.S. citizens, are living longer than originally estimated, and therefore collecting social security for a longer period of time. Although we use the term "risk," it is more of a certainty that requires adequate planning. For example, although the retirement age in many developed countries is between 60 and 67 (see Table 1.1), in many of these nations, the average life expectancy is well over 75. This means that the average taxpayer collects social security (as well as any health benefits) for 10 to 15 years. In the U.S., the average life expectancy is about 78; in Japan, it is 82.6, the highest in the world.

Figures 1.7 through 1.9 show the exponential increase in human longevity. As technology rapidly advances, so does our ability to live longer. Life expectancies have increased dramatically since 1840 due to the eradication of smallpox and a general improvement in health conditions. Thereafter, life spans increased at an average rate of 2.5 years per decade for the next 160 years. By 1900, the highest average life expectancy was roughly 60, and by 2000 it was over 80.

TABLE 1.1 Retirement Age and Percentages of Employed Older Workers

Country	Early Retirement Age	Normal Retirement Age	Employed, 55 to 59	Employed, 60 to 64	Employed, 65 to 69	Employed, 70 and Over
Austria	60 (57)	65 (60)	39%	7%	1%	0%
Belgium	60	65	45%	12%	1%	0%
Denmark	None	65	77%	35%	9%	1%
France	62	65	51%	12%	1%	0%
Germany	65	67	64%	23%	3%	0%
Greece	57	65	51%	31%	8%	1%
Italy	57	65 (60)	34%	12%	1%	0%
Netherlands	60	65	53%	22%	3%	0%
Norway	62	67	?	?	?	?
Spain	60	65	46%	22%	0%	0%
Sweden	61	65	78%	58%	5%	1%
Switzerland	63 (61), [58]	65 (64)	77%	46%	7%	2%
United Kingdom	None	65	69%	40%	10%	2%
United States	62	67	66%	43%	20%	5%

Source: Organization for Economic Cooperation and Development (OECD)

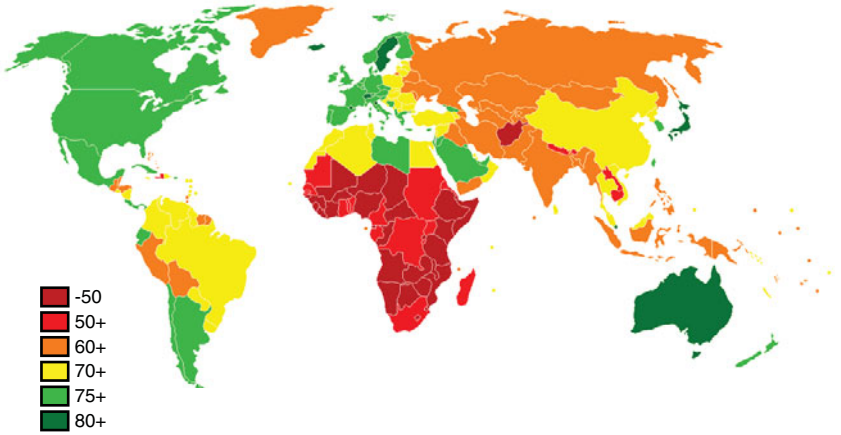
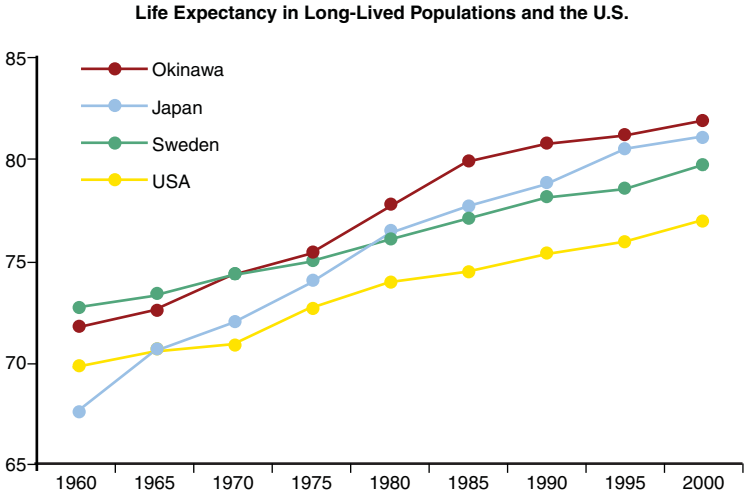


Figure 1.7 Global life expectancy in 2009

Source: CDC



Source: W.H.O. 1996; Japan Ministry of Health and Welfare 2004; US Department of Health and Human Services/CDC 2005.

Figure 1.8 Life expectancy since 1960 in long-lived populations and the U.S.

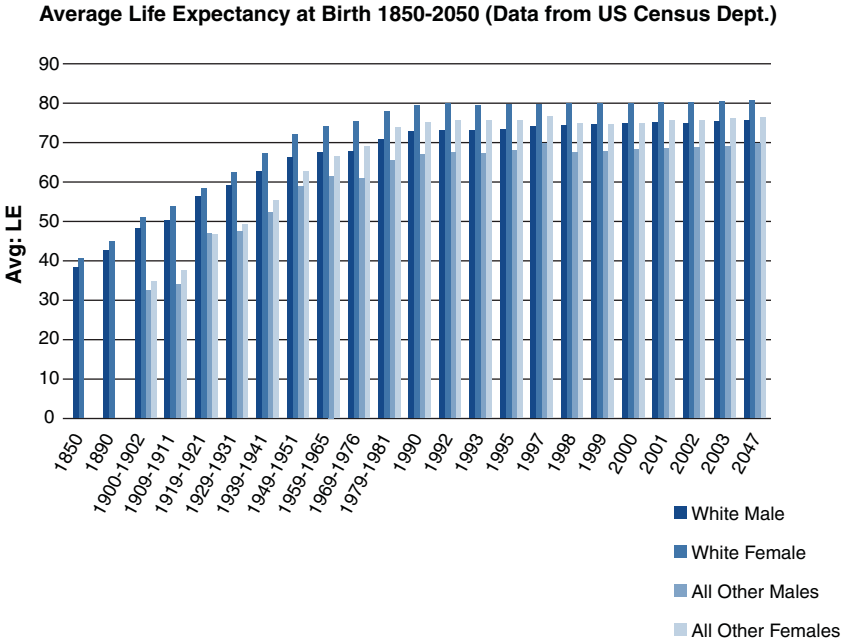


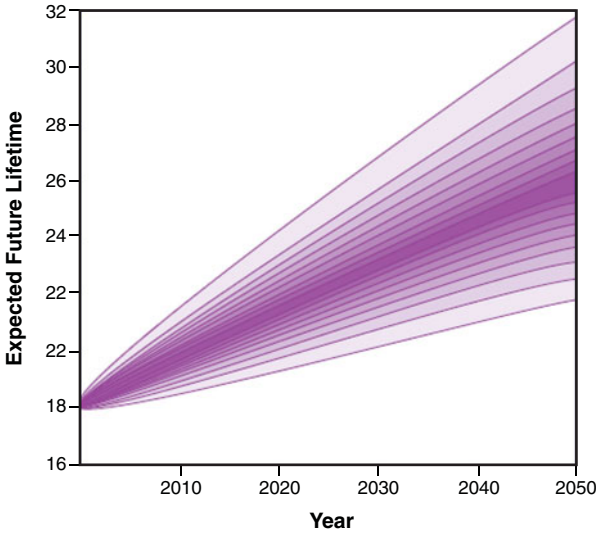
Figure 1.9 Average life expectancy

Between 1960 and 2002, average life expectancy rose from 36 to 71 in China, from 56 to 71 in Latin America and the Caribbean, from 47 to 69 in the Middle East and North Africa, and from 44 to 63 in South Asia.⁴

Given that each additional year of life expectancy after age 65 adds roughly 3% to the present value of pension liabilities, the cost of providing pensions in 2050 may be 18% higher than currently expected.⁵ For many pension funds, this uncertainty is a substantial and unquantifiable risk, leaving them unprepared to address future obligations (see Figure 1.10).

The first pension fund was created by Otto von Bismarck, the Prime Minister of Prussia from 1862 to 1890, under the Old Age and Disability Insurance Bill of 1889. This program used tax revenues to make annuity payments to seniors who reached the age of 70. Average life expectancy at birth during this time was 46. In 1918, the German government lowered the eligibility age from 70 to 65, where it

remains, more or less, even though average life expectancy in Germany has skyrocketed to 80.



Source: Dowd et al (2007, Figure 3)

Figure 1.10 Pension deficits and surpluses (UK-based defined benefit pensions)

Source: Pension Protection Fund

Retirement ages should have been hiked decades ago around the world; however, any politician who suggested doing so was met with disdain by party rivals and voters. In 2010, when French parliament raised the retirement age from 60 to 62, workers took to the streets in violent protests. The same occurred in Greece after the nation announced that it plans to increase the retirement age to 63 from 61 and ban early retirement.

Coupled with the recent economic crisis, which has left major U.S. corporations with \$400 billion in underfunded programs (from a \$60 billion surplus at the end of 2007), the risk of longer-living populations is substantial. Uncertainty in retirement programs has resulted in the growth of *reverse equity* markets such as life settlements and reverse mortgages. These allow seniors to sell their life insurance

policies or equity in their homes in exchange for an upfront lump sum. Moreover, the number of working seniors has more than doubled over the past 20 years (see Figure 1.11) due to the destruction of the nest egg.

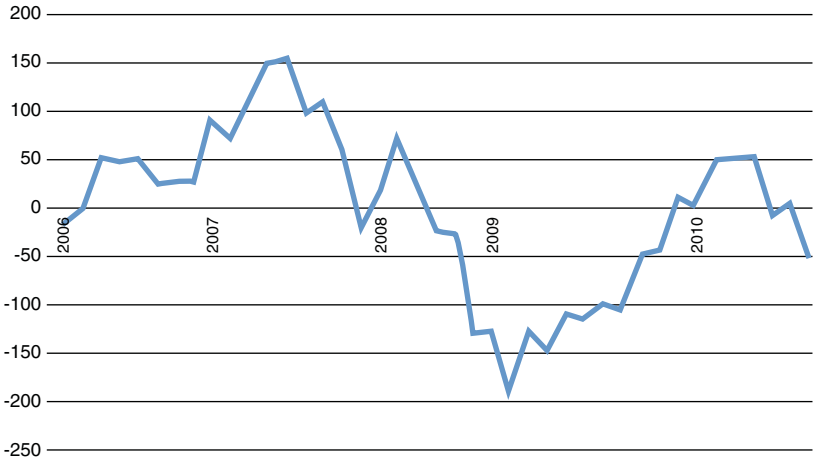


Figure 1.11 U.S. workers by age

Source: U.S. Bureau of Labor Statistics

Even though increased life expectancy is the logical result of improvements in modern medicine, life expectancies have become increasingly uncertain (see Figure 1.12). Many factors can hinder longevity and cause life expectancy to fall. For example, obesity rates in the U.S. for both children and adults are at alarming levels (and the rest of the world is following suit). Perhaps we as a society take our health for granted and rely too heavily on medicine to bail us out.

Figure 1.13 (a-f) is a state-by-state mapping of body mass index (BMI) levels in the U.S. Keep in mind that this data includes lower-income individuals. The disparity in life expectancy estimates between individuals of higher and lower socioeconomic levels, as well as between white and black Americans, is significant. On the other hand, the disparity between men's and women's life expectancies is actually narrowing.

U.S. Workers by Age 1950 to 2009 (monthly average for each year; in millions)

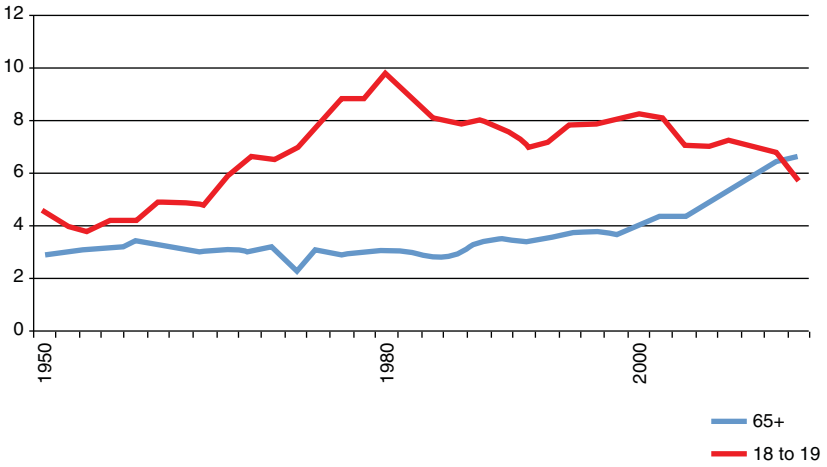


Figure 1.12 Longevity fan chart at age 65

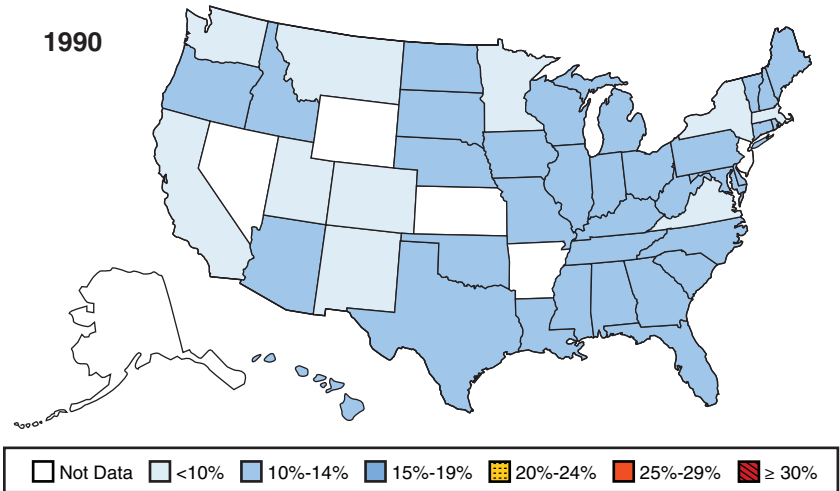


Figure 1.13a U.S. BMI levels, 1985–2008

1995

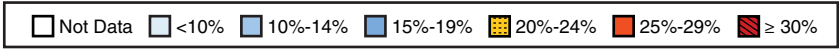
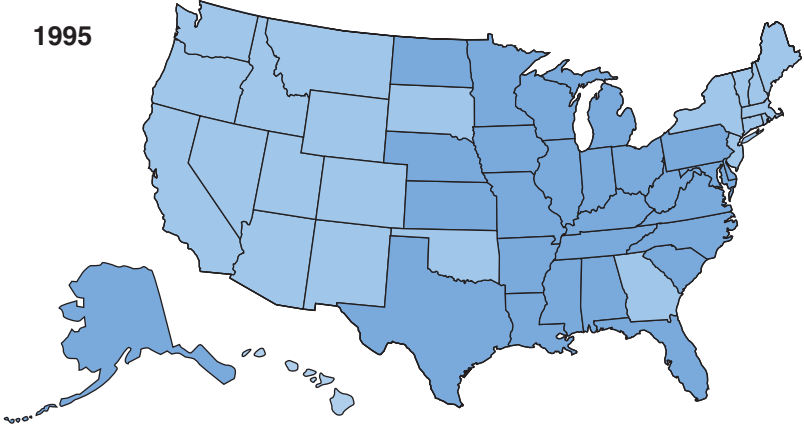


Figure 1.13b U.S. BMI levels, 1985–2008 (continued)

2000

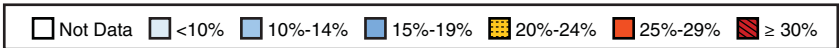
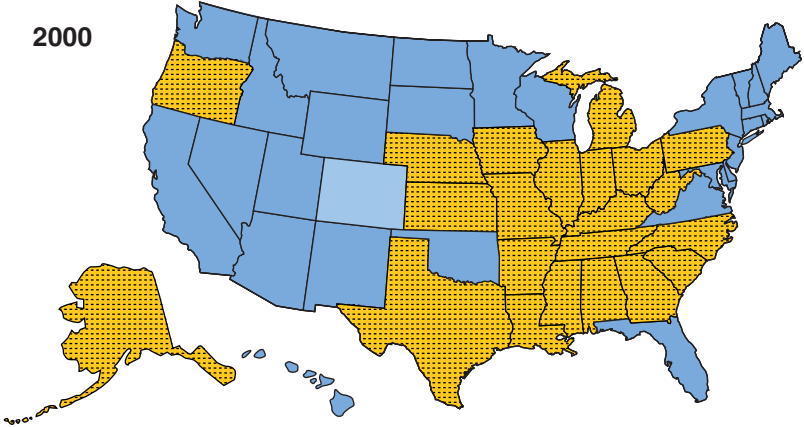


Figure 1.13c U.S. BMI levels, 1985–2008 (continued)

2005

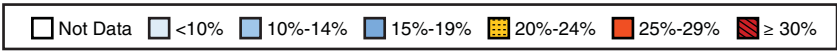
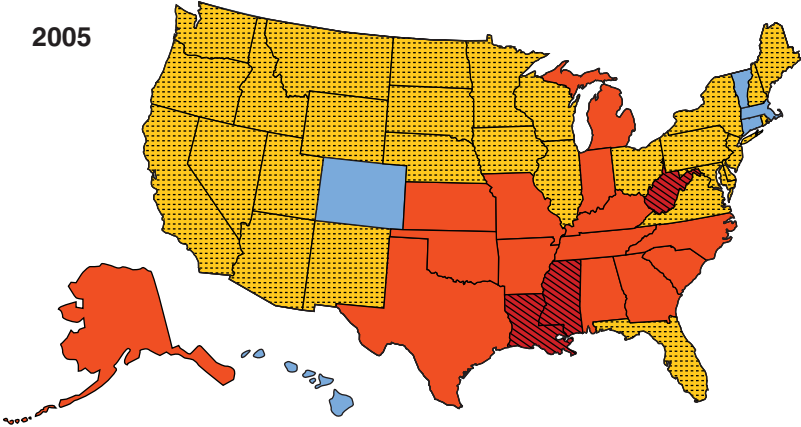


Figure 1.13d U.S. BMI levels, 1985–2008 (continued)

2008

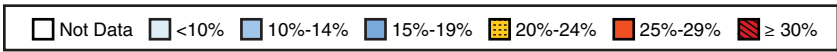
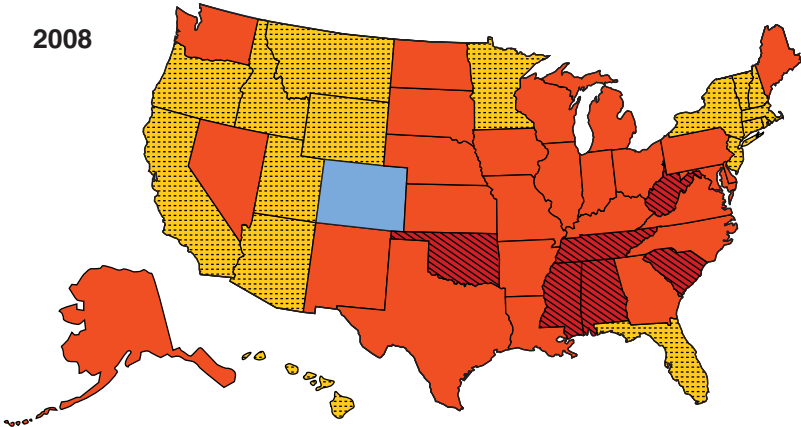


Figure 1.13e U.S. BMI levels, 1985–2008 (continued)

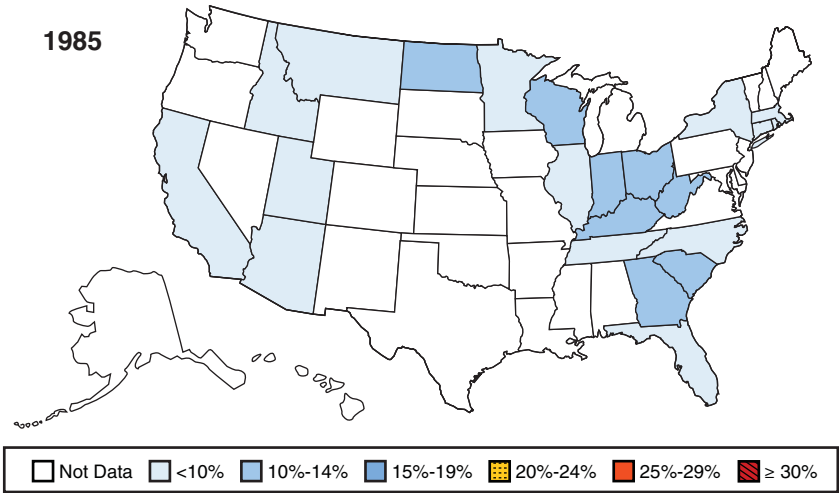


Figure 1.13f U.S. BMI levels, 1985–2008 (continued)

Historically, developed nations have experienced a general mortality improvement rate of roughly 1% per annum, with a “mortality shock” ranging from plus or minus 3%, with 5% being an absolute extreme. A positive mortality improvement shock could result from, for example, a cure for cancer. A negative mortality improvement shock could result from the spread of a new disease or an unforeseen side effect of artificially grown foods. The last major mortality shock was the Spanish influenza pandemic of 1918, which lasted from 1917 to 1920. Almost 3% of the world’s population (50 million) died of the disease, and 28% (500 million) were infected. This disease was unique in that infections in younger people were more fatal than those of their older counterparts. This has also been the case to a much lesser extent in outbreaks occurring in 1976, 1988, 1998, and 2007. Figure 1.14 shows typical mortalities among various ages from 1911 to 1917 compared to the mortality distribution in 1918.

Generally, *mortality risk* is the inverse of longevity risk. It is the risk that a group of individuals dies before and unexpectedly relative to estimates. As mentioned, longevity “risk” is actually more of a given that requires adequate planning. In contrast, unexpected mortality is a risk in the more traditional sense because it is unforeseen. For example, whereas a pension fund’s obligations increase as life expectancy increases (longer-living retirees mean the pension must

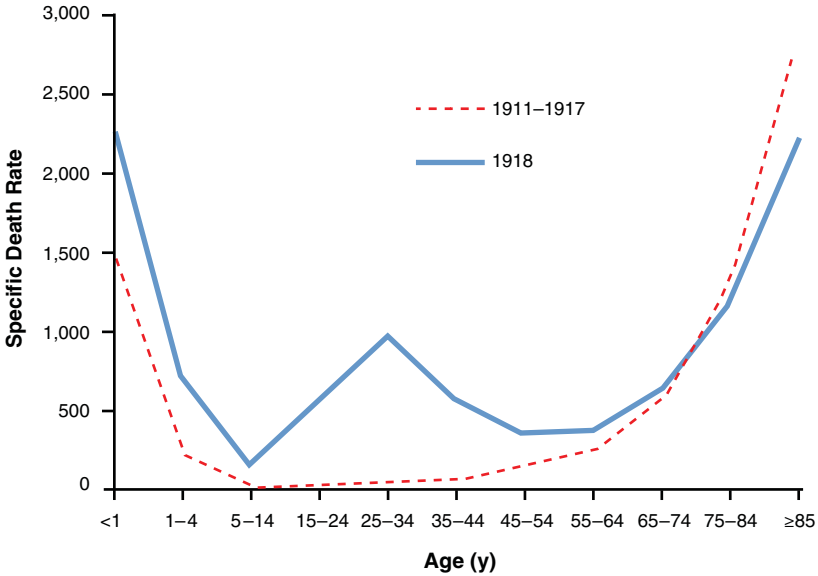


Figure 1.14 Mortality disparity of the Spanish flu

Source: CDC

make more payments), a life insurance company may be subject to the risk of substantial numbers of early deaths. In the latter example, the life insurance company would have to pay more claims than expected and would experience a reduction in premium inflows. Table 1.2 shows the relationship between longevity risk and mortality risk and lists organizations that may be exposed to each.

TABLE 1.2 The Relationship Between Longevity Risk and Mortality Risk

	Longevity Risk	Mortality Risk
Definition	The group lives longer than estimates	The group dies prior to estimates
Actuarial notation	$1-q_x$	q_x
Exposure	Corporate-defined benefit pension programs, annuity providers, social security (governments), life settlement investors, reverse mortgage lenders	Life and health insurance companies, pharmaceutical companies, municipalities reliant on wealthy elderly residents

The next chapter provides more details on why certain groups are exposed to either longevity or mortality risk.

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