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LONGEVITY RISK IN THE OLDEST OLD

At a recent life settlements conference, participants were focused on the methods used to predict longevity for the age group known as the oldest old – people 85 years old and older. As seen in Table 1, this segment of the population forms a rapidly increasing demographic. Given the longer life expectancies suggested for many age-duration combinations in the 2008 Valuation Basic Table (VTB), published by the U.S. Society of Actuaries in March 2008, investors looking for enhanced returns are examining life settlements based on more-elderly insureds. With the exception of the baby-boomer generation driving increases in the 55-to-64 age bracket in 2008, the elderly is clearly the fastest-growing sector of the U.S. population and their life expectancy is growing as well (see Table 2).

Table 1: Mid-Year U. S. Population by Age

Age Range	0-24	25-54	55-64	65-74	75-79	80+
1968	92,773,000	70,477,000	18,088,000	12,178,000	3,780,000	3,406,000
1973	95,401,000	75,557,000	19,428,000	13,246,000	4,065,000	4,212,000
1978	94,396,000	82,572,000	21,113,000	14,995,000	4,571,000	4,936,000
1983	92,739,374	92,095,046	22,112,114	16,413,436	5,237,168	5,710,069
1988	90,831,510	102,552,316	21,513,981	17,626,305	5,907,884	6,589,418
1993	93,723,309	112,608,454	21,028,968	18,692,762	6,485,746	7,716,113
1998	97,628,776	120,886,720	23,002,587	18,563,051	7,224,415	8,809,739
2003	101,951,613	124,644,708	27,867,892	18,327,057	7,429,737	10,121,547
2008	104,062,152	127,352,266	33,720,059	20,054,212	7,226,693	11,409,264

Source: U. S. Census Bureau, International Data Base.

Table 2: Life Expectancy at Age 85*

Year	Life Expectancy	Lived to Age 85
1900	3.8 Years	1900 6%
1950	4.4 Years	2000 35%
2000	6.3 Years	

* Based on population mortality. Source: Fasano Associates November 2008 Life Settlements Conference.

The central question is the method employed to measure longevity in the oldest-old age range. Several studies indicate that many people in this sector escape the leading causes of mortality (i.e., cardiac disease, stroke, cancer and diabetes) completely or the onset of them is delayed. From this notion stems the currently popular belief that among the oldest old, delayed onset (i.e., the first diagnosis is after the age of 85) may indicate a serious impairment but not necessarily one that might lead to a mortality event. Implicit in this statement is the idea that individuals 85 years old or older are in a “maintenance mode,” where the likelihood of mortality from causes such as dementia, frailty, loneliness or accidents is greater than the likelihood of mortality from cardiac disease, stroke, cancer or diabetes.

Although data to support this conjecture may not be readily available, the Centers for Disease Control and Prevention (CDC) has studied the 15 leading causes of death by age group (see Table 3). Results show that although Alzheimer’s disease is a very significant cause of death in the oldest-old cohort – almost five times more prevalent than in the 75-to-84 age group and more than 40 times more likely than in the 65-to-74 age group – heart disease, malignant neoplasms (metastatic cancer) and cerebrovascular diseases are more likely to be this group’s primary cause of mortality. Line items for frailty and loneliness do not exist in this study; however, unintentional injuries and intentional injuries in the 85 and older age bracket are less common than even cognitive impairments.

Table 3: Leading Causes of Death by Age per 100,000

Cause of Death	65-74 Years	75-84 Years	85 Years and Older
All causes	2,137.1	5,260.0	13,798.6
Diseases of heart	518.9	1,460.8	4,778.4
Malignant neoplasms	742.7	1,274.8	1,637.7
Cerebrovascular diseases	101.1	359.0	1,141.8
Alzheimer's disease	20.5	177.3	861.6
Chronic lower respiratory diseases	160.5	385.6	637.2
Influenza and pneumonia	35.5	142.2	593.9
Diabetes mellitus	86.8	177.2	312.1
Nephritis, nephrotic syndrome and nephrosis	39.3	110.3	288.3
Accidents (unintentional injuries)	46.3	106.1	279.5
Hypertension and renal disease	17.7	55.6	210.0
Septicemia	32.6	81.4	187.3
Parkinson's disease	13.0	71.2	143.7
Chronic liver disease and cirrhosis	27.2	29.0	19.7
Intentional self-harm (suicide)	12.6	16.9	16.9
Assault (homicide)	2.4	2.2	2.1

Source: National Vital Statistics Reports, Volume 56, Number 10, final data for 2005, April 2008.

These statistics cast doubt on the theory that the oldest old are in “maintenance mode.” Perhaps the theory applies not to the oldest-old group, but rather to centenarians. A quick search for research abstracts discussing the centenarian age group turns up frequent mentions of the idea that a significant segment of this population exhibits delayed onset of the age-related fatal diseases or has escaped them completely. Like the 85-to-99 age group, the centenarian group is also expanding rapidly. Data detailing causes of death in centenarians is not broken out on the CDC website.

A study of “contingent events” (i.e., events that are related to the most proximate cause of death) for the 85-to-99 cohort would indeed be beneficial and possibly essential in attempting to explain the underlying reasons for mortality. For example, an accident causing a hip injury may not be the listed cause of death even though the mortality occurred due to resulting and subsequent factors (e.g., pneumonia, infection or stroke from a blood clot). In the centenarian cohort, data differentiating mortalities due to old age from mortalities due to particular medical conditions would also be quite helpful in revising mortality tables to reflect the aging patterns of the oldest segment of the life settlements universe.

The fact that data is not readily available for the centenarian segment of the population, or even for the 85 years and older group, is to be expected in light of the growth of these sectors. Even the 2008 VTB explains that the “underlying data becomes sparse and less reliable for ages in the mid- to late 80s and beyond.”

For questions or comments, please contact Jan Buckler at jbuckler@dbrs.com.

Note: Due to the overwhelming response to the U.S. Structured Finance Newsletter published on December 8, 2008 (“Emergent Trend in Re-REMICs for Capital Preservation”), DBRS has expanded the newsletter to help investors better understand the practicality of such transactions. The updated newsletter is available by [clicking here](#).