Korea's Population: 50 million

1. Population clock

○ According to the results of "Population Projections (2010~2060)", the population of South Korea reached 50 million on June 23, 2012.

 - On the same day, the world population recorded 7.05 billion. South Korea's population occupied 0.71 percent of the world's entire population.

2. Time to increment Korean population by 10 million

		South Korea		The world	
		1983	2012	1983	2012
Population (as of July 1)		39,910,403	50,004,441	4,694,097,000	7,052,135,000
Births per	Year	769,155	457,082	645,439,000	678,873,000
	Day	2,107	1,249	1,763,495	1,854,844
	Hour	88	52	73,479	77,285
Deaths per	Year	254,563	268,524	235,156,000	290,467,000
	Day	697	734	642,503	793,626
	Hour	29	31	26,771	33,068
Natural increase per	Year	514,592	188,539	410,283,000	388,406,000
	Day	1,410	515	1,120,992	1,061,219
	Hour	59	21	46,708	44,217

Source: KOSTAT (2011), Population Projections: 2010~2060,
　　　 UN (2010), World Population Prospects: The 2010 Revision

○ In 1967, the population of South Korea surpassed 30 million. It took 16 years to increase by 10 million to 40 million. Korea's population grew by about 0.6 million annually between 1967 and 1983.

 - It took 29 years to increase by 10 million from 40 million in 1983 to 50 million in 2012. During that time, 0.3 million people was annually added to Korea's total.

○ The era of 50 million population is projected to last over the next 33 years.

 - The population of South Korea is expected to reach a peak in 2030 with 52.16 million, and then fall to under 50 million in 2045.

 - Between 2045 and 2069, the population of South Korea is expected to decrease by 10 million.

 - Afterwards, it will take 22 years to decrease to 30 million in 2091.

[Figure 1] Time to increment Korean population by 10 million
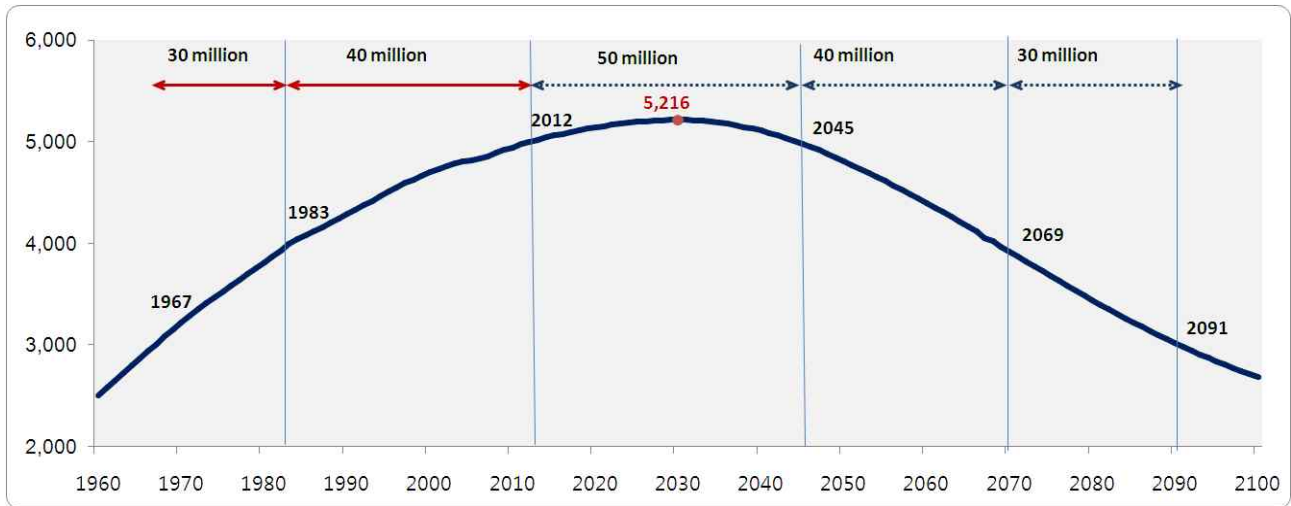
Source: KOSTAT (2011), Population Projections: 2010~2060,
Note: Projected populations after 2060 are based on scenarios of fertility, mortality, and international migration in 2060 assumed to remain constant over 2100.

3. Low fertility

○ Korea has experienced the below-replacement level fertility (2.1 children per woman) in 1983 and declined to 1.23 in 2010.

[Table 2] Total fertility rate and number of live births, 1983~2040

	1983	1990	2000	2010	2020	2030	2040
Total fertility rate (person)	2.06	1.57	1.47	1.23	1.35	1.41	1.42
Number of live births (thousand)	769	650	635	470	451	409	325

Factors on low fertility :

1) Labor force participation rate

○ The proportion of women among the prime reproductive age group (25~34 years) has increased in labor market.

- The labor force participation rate of females in their late twenties was 69.4 percent in 2010, compared to 32.0 percent in 1980.

- Compared to 1980, the labor force participation rate of females in their early thirties rose by 13.6%p to 54.4 percent in 2010.

2) The percentage of unmarried rate

○ There has been a sharp rise of the percentage of unmarried females for last three decades.

- The percentage of single females in their late twenties rose from 14.1 percent in 1980 to 69.3 percent in 2010.

- The percentage of single females in their early thirties rose by more than ten times from 2.7 percent in 1980 to 29.1 percent in 2010.

3) Mean age at first marriage and the mean age at childbearing

○ The mean age at first marriage and childbirth showed an upward trend due to the increasing percentage of unmarried persons.

- The mean age at first marriage for females grew by 5.7 years from 23.2 years in 1981 to 28.9 years in 2010.

- The mean age at childbearing increased by 4.2 years from 27.1 years in 1981 to 31.3 years in 2010.

4) Age-specific fertility rate

○ The rise in the percentage of unmarried persons and the rise in the age at first marriage moved the peak of age at childbirth from late twenties in 1980 to early thirties in 2010.

[Table 3] Age-specific fertility rates in 25 to 34 years old, 1980-2010

Age-specific fertility rates (per 1,000 persons)	1980	1985	1990	1995	2000	2005	2010
25 - 29 years	238.5	155	167.7	175	149.6	91.7	79.7
30 - 34 years	113.2	38.1	48.4	70	83.5	81.5	112.4

○ Over the past three decades, fertility rates showed a decrease all over the world.

- Western developed countries had been experiencing the low fertility in 1980s and 1990s. Although fertility in Western countries has slightly increased since 2000, it remains the below-replacement level (2.1 children per woman), except only U.S.

- In the meantime, over the past three decades, fertility s of BRICs showed a sharp decrease. The total fertility rate of India dropped from 4.47 in 1980 to 2.54 in 2010. After 2005, the total fertility rate of Brazil dropped to the below-replacement fertility from 3.8 in 1980.

[Table 4] Total fertility rate of major countries, 1980~2015

Total fertility rate (person)	South Korea	U.S.A	France	United Kingdom	Germany	Japan	India	Brazil	China	Russia
1980 - 1985	2.30	1.80	1.87	1.78	1.46	1.75	4.47	3.80	2.61	2.04
1985 - 1990	1.58	1.89	1.80	1.84	1.43	1.66	4.11	3.10	2.63	2.12
1990 - 1995	1.67	1.99	1.71	1.78	1.30	1.48	3.72	2.60	2.01	1.55
1995 - 2000	1.52	1.96	1.76	1.74	1.34	1.37	3.31	2.45	1.80	1.25
2000 - 2005	1.25	2.04	1.88	1.66	1.35	1.30	2.96	2.25	1.70	1.30
2005 - 2010	1.16	2.07	1.97	1.83	1.36	1.32	2.73	1.90	1.64	1.44
2010 - 2015	1.23	2.08	1.99	1.87	1.46	1.42	2.54	1.80	1.56	1.53

Source: UN (2010), World Population Prospects: The 2010 Revision,
       KOSTAT (2011), Population Projections (2010~2060)

4. Increasing life expectancy

○ Between 1980 and 2010, life expectancy for both sexes increased more than 15 years. That was the average gain of 5 years in life expectancy for every ten years.

- The life expectancy at birth of males increased by 15.4 years from 61.8 years in 1980 to 77.2 years in 2010. The life expectancy at birth of females increased by 14.1 years from 70.0 years in 1980 to 84.1 years in 2010.

- The life expectancy of males is expected to increase from 77.2 years in 2010 to 83.4 years in 2040. The life expectancy of females is expected to increase from 84.1 years in 2010 to 88.2 years in 2040.

[Table 5] Life expectancy at birth by gender, 1980~2040

Life expectancy at birth (year)	1980	1990	2000	2010	2020	2030	2040
Total	65.7	71.3	76.0	80.8	82.6	84.3	86.0
Male	61.8	67.3	72.3	77.2	79.3	81.4	83.4
Female	70.0	75.5	79.6	84.1	85.7	87.0	88.2
Gender gap (Female - Male)	8.2	8.2	7.3	6.9	6.4	5.6	4.8

Source: KOSTAT, Life Tables, Population Projections (2010~2060) (2011)

○ The life expectancy at birth showed an upward trend all over the world. The life expectancy of developed countries tends to be high. After 1980, the life expectancy of BRICs (Brazil, Russia, India and China) showed a sharp increase.

- In 2010, the life expectancy at birth of Japan recorded the highest figure at 83.7 years. The life expectancy at birth of France, South Korea, Germany and United Kingdom marked around 80 years.

- Compared to 1980, the life expectancy of developed countries increased by 4 to 7 years. The life expectancy at birth of BRICs (excluding Russia) increased by 6 to 10 years compared to 1980.

- Over the next three decades, the life expectancy at birth of developed countries would rise by 3 to 4 years. The life expectancy at birth of BRICs would rise by 5 to 7 years.

[Table 6] Life expectancy at birth of major countries, 1980~2040

Life expectancy at birth (year)		South Korea	U.S.A	France	United Kingdom	Germany	Japan	India	Brazil	China	Russia
1980		65.7	74.3	74.8	74.1	73.8	76.9	56.2	63.4	67.7	67.4
2010		80.8	78.8	81.7	80.4	80.6	83.7	66.0	74.0	73.8	69.2
2040		86.0	82.5	85.3	83.8	84.3	86.9	72.9	78.8	78.5	74.8
Change	From 1980 to 2010	15.1	4.4	7.0	6.3	6.8	6.7	9.8	10.6	6.1	1.7
	From 2010 to 2040	5.2	3.7	3.6	3.4	3.7	3.2	6.9	4.8	4.8	5.7

Source: UN (2010), World Population Prospects: The 2010 Revision
KOSTAT (2011), Population Projections (2010~2060)

5. Population Aging

Rising median ages

○ The median age of South Korea increase by 16 years from 21.8 years in 1980 to 37.9 years in 2010. The median age will increase by 10 years to 48.5 years in 2030. Afterward, the increasing speed of the median age will slow down. The median age will reach 52.6 years in 2040.

○ The low fertility rate and the increase in the life expectancy at birth contributed to the steady increase in median age.

- As of 2010, the mean age of Japan recorded the highest figure of 44.7 years, which was followed by Germany (44.3 years).

- In 2040, the mean age of Japan (52.6 years), South Korea (52.6 years) and Germany (50.0 years) is projected to surpass 50 years.

[Table 7] Median ages of major countries, 1980~2040

Median age (year)		South Korea	U.S.A	Franc	United Kingdom	Germany	Japan	India	Brazil	China	Russia
1980		21.8	30.0	32.4	34.4	36.4	32.6	20.1	20.4	22.4	31.3
2010		37.9	36.9	39.9	39.8	44.3	44.7	25.1	29.1	34.5	37.9
2040		52.6	39.6	42.7	42.4	50.0	52.6	34.3	41.3	46.4	44.9
Change	Form 1980 to 2010	16.1	6.8	7.5	5.4	7.9	12.1	5.1	8.7	12.1	6.6
	From 2010 to 2040	14.7	2.8	2.8	2.6	5.7	7.9	9.1	12.2	11.8	`7.0

Source: UN (2010), World Population Prospects: The 2010 Revision,
KOSTAT (2011), Population Projections (2010~2060)

Change in the working age population

○ When considering the working age population aged 15 to 64 in 2010 as 100.0, the working age population of South Korea will decline to 80.2 in 2040. South Korea's working age population will decrease by more than 7 million.

○ Over the next three decades, the working age population of Japan will mark the highest decrease (75.5), which will be followed by Germany (78.4) and South Korea (80.2).

- Among developed countries, the working age population of the U.S.A and the United Kingdom is projected to continuously increase until 2040.

- Among BRICs, the working age population of India is expected to increase to 140.8 in 2040 if the working age population in 2010 is considered as 100.

- The working age population of Brazil is expected to increase to 114.3 in 2030 if the working age population in 2010 is considered as 100. Afterwards, the working age population is expected to decrease.

- After marking a peak around 2020, the working age population of China is projected to decrease to 88.5 in 2040 if the working age population in 2010 is considered as 100.

[Table 8] Chnage in working age population of major countries, 1980~2040

Working age population (2010=100)	South Korea	U.S.A	France	United Kingdom	Germany	Japan	India	Brazil	China	Russia
1980	65.9	73.2	84.3	88.0	94.8	96.5	50.4	53.6	60.1	91.6
1990	82.5	80.3	91.8	91.1	100.5	105.4	64.5	68.6	77.9	96.1
2000	93.7	90.2	94.4	93.6	102.9	105.9	81.5	86.0	88.3	98.7
2010	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2020	101.6	103.9	99.7	102.2	94.9	90.8	116.9	111.3	101.9	92.3
2030	91.4	106.3	99.9	103.8	84.9	85.1	131.0	114.3	98.9	86.0
2040	80.2	111.4	100.2	104.3	78.4	75.5	140.8	113.2	88.5	82.1

Source: UN (2010), World Population Prospects: The 2010 Revision,
KOSTAT (2011), Population Projections (2010~2060)

Growing the elderly population

○ As of 2010, the elderly population aged 65 or more was 5.45 million, which occupied 11.0 percent of the total population. The elderly population in 1980 was the level of 26.7 (1.46 million) of the elderly population in 2010. For the past three decades, the elderly population increased by 4 million.

○ The elderly population in 2040 will sharply increase to the level of 302.6 of the elderly population in 2010. Until 2040, the elderly population will increase by 11 million.

○ Over the coming three decades, the aged population is projected to increase by 2~3 times all over the world.

 - The elderly population of Brazil, China, India and South Korea will increase to the level of 368.0, 347.8, 335.3 and 302.6 of the elderly population in 2010, respectively.

 - In 2040, the elderly population of Western developed countries and Japan will increase by 2 times compared to 2010.

[Table 9] Aged population of major countries, 1980~2040

Aged population (2010=100)	South Korea	U.S.A	France	United Kingdom	Germany	Japan	India	Brazil	China	Russia
1980	26.7	64.0	71.2	81.7	72.8	36.5	41.3	35.9	46.1	77.4
1990	40.3	78.1	75.4	87.3	70.2	50.9	54.9	48.8	62.0	82.6
2000	62.3	86.3	89.9	90.5	80.0	75.2	74.0	70.9	80.9	99.5
2010	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2020	148.3	166.9	163.9	152.1	146.5	163.3	166.0	180.8	175.4	146.2
2030	232.8	224.1	197.3	185.1	170.6	179.9	239.4	269.4	244.5	169.8
2040	302.6	265.4	227.5	210.9	189.5	188.5	335.3	368.0	347.8	185.1

Source: UN (2010), World Population Prospects: The 2010 Revision,
KOSTAT (2011), Population Projections (2010~2060)

Aged dependency ratio

○ The aged dependency ratio increased by 2.5 times from 6.1 persons in 1980 to 15.2 persons in 2010.

○ All over the world, the aged dependency ratio will mark a rise due to the decrease in the working age population and the increase in the elderly population.

 - Compared to the developed countries, the aged dependency ratio of South Korea recorded the lowest figure in 2010. After 2020, the aged dependency ratio will show a sharp rise to the second highest figure after Japan (63.3 persons) in 2040.

 - In 2010, the aged dependency ratio of Russia recorded the highest figure at 17.7 persons among emerging economies. In 2040, the aged dependency ratio of China is expected to record the highest figure at 36.9 persons among emerging economies.

[Table 10] Aged dependency ratio of major countries, 1980~2040

Aged dependency ratio (per 100 working age pop.)	South Korea	U.S.A	France	United Kingdom	Germany	Japan	India	Brazil	China	Russia
1980	6.1	17.1	21.9	23.3	23.7	13.4	6.3	6.9	8.7	15.0
1990	7.4	19.0	21.3	24.1	21.5	17.1	6.5	7.4	9.0	15.3
2000	10.1	18.7	24.7	24.3	24.0	25.2	6.9	8.5	10.4	17.9
2010	15.2	19.5	25.9	25.1	30.8	35.5	7.6	10.4	11.3	17.7
2020	22.1	25.3	32.9	29.4	36.0	48.2	9.5	13.8	16.8	22.5
2030	38.6	32.7	38.9	34.4	48.2	52.9	12.2	20.0	23.9	29.4
2040	57.2	34.7	43.1	38.5	56.1	63.3	15.4	26.6	36.9	31.2

Source: UN (2010), World Population Prospects: The 2010 Revision,
    KOSTAT (2011), Population Projections (2010~2060)

Effect of births, deaths and international migration on population change

○ The reference (medium growth) scenario of *the Population Projection for Korea: 2010-2060* is a total fertility of 1.42 children per woman in 2060. The life expectancy at birth is projected to be 88.6 years in 2060. The international net migration will reach +23 thousand in 2060.

○ In the long term, the total fertility rate is the most important component of population growth. Until 2030, the speed of population ageing, in terms of the proportion of older persons in the population, depends on the increase in life expectancy. After 2030, the speed of population aging will be highly dependent on the level of fertility.

○ If the total fertility rate were to increase to 1.79 rather than 1.42 in 2060;

 - the first year of Korean population decline under 50 million would be delayed 13 years, from 2045 to 2058.

 - the proportion of older persons would decrease by 4.3 percent point from 40.1 percent in 2060, which is the projected level of the medium growth scenarios.

 - the speed of population ageing would slow down over 14 years.

<Note 1> Assumptions of the effect of births, deaths and international migration on population change

○ The medium growth scenario is a basic scenario of population projections. Fertility, life expectancy at birth and international migration are key components of population change.

Population growth scenario	2010	2060		
		High growth assumptions	Medium growth assumptions	Low growth assumptions
Total fertility rate (person)	1.23	1.79	1.42	1.01
Life expectancy at birth (year)	80.8	91.0	88.6	85.9
International net migrants (thousand persons)	+82	+82	+23	-2

[Table 11] Projected total population by different level of population change components, 2010~2080

Total population (thousand persons)			2010	2020	2030	2040	2050	2060	2070	2080
Medium growth scenarios			49,410	51,435	52,160	51,091	48,121	43,959	39,209	34,414
By assumptions	Total fertility rate	1.79	49,410	52,234	53,865	53,679	51,982	49,281	45,907	42,644
		1.01	49,410	50,683	50,234	48,173	44,105	38,625	32,660	26,749
	Life expectancy at birth	91.0	49,410	51,826	53,078	52,518	49,991	45,991	41,130	36,119
		85.9	49,410	50,985	51,110	49,450	45,985	41,715	37,101	32,541
	Net international migration	+80,000	49,410	51,977	53,427	53,044	50,672	47,030	42,621	37,949

[Table 12] Projected proportions of the elderly population by different level of population change components, 2010~2080

Proportion of the elderly population (%)			2010	2020	2030	2040	2050	2060	2070	2080
Medium growth assumptions			11.0	15.7	24.3	32.3	37.4	40.1	40.9	39.5
Percent point change	Total fertility rate	1.79	0.0	-0.2	-0.8	-1.6	-2.8	-4.3	-6.0	-6.8
		1.01	0.0	0.2	0.9	2.0	3.4	5.5	8.2	10.4
	Life expectancy at birth	91.0	0.0	0.4	1.0	1.5	2.0	2.4	2.5	2.6
		85.9	0.0	-0.5	-1.1	-1.7	-2.4	-2.7	-2.9	-3.0
	Net international migration	+80,000	0.0	-0.1	-0.3	-0.4	-0.4	-0.2	-0.1	-0.2

6. Characteristics of the elderly

Late effective retirement age

○ In 2009, the effective retirement age of Germany was 61.8 years, which was 3.2 years faster than legal retirement age (65 years).

[Table 13] Effective retirement age of major countries, 1980~2009

Effective retirement age	1980	1985	1990	1995	2000	2005	2009
South Korea	68.4	66.4	70.0	70.6	67.1	70.2	70.3
Japan	70.7	69.9	70.4	70.9	70.1	69.3	69.7
United Kingdom	66.0	62.8	62.8	62.0	62.4	63.3	64.3
France	63.5	62.1	60.0	59.3	58.8	58.6	59.1
Germany	-	-	-	-	61.0	61.7	61.8
U.S.A	66.4	65.8	64.7	64.2	64.7	64.6	65.5

Source: OECD (2009), Society at a Glance 2009: OECD Social Indicators

Labor force participation of the elderly population

○ In 2011, employment rates for people aged 65 or more of South Korea stood at 28.9 percent, which was the second highest among OECD member countries.

○ In 2011, the employed persons aged 60 or more amounted to 2.89 million persons. 28.4 percent of them were engaged in agriculture, forestry and fishing.

○ In 2011, 40.7 percent of the elderly employed persons aged 60 or more were self-employed persons (without employees). The percentage of self-employed persons (without employees) aged 60 or more was 23.8%p higher compared to the percentage of self-employed persons (without employees) of the total employed persons.

[Table 14] Employment by age and status of worker, 2011

Age	Total Employed persons (thousand persons)	Persons engaged in agriculture, forestry and fishing	Share (%)	Self-employed persons (without employees)	Share (%)
Persons aged 15 or more	24,244	1,419	5.9	4,088	16.9
Persons aged 60 or more	2,886	819	28.4	1,176	40.7

* Source: KOSTAT (2012), Annual Report on the Economically Active Population Survey

The elderly population with higher educational attainment

○ As of 2010, 7.3 percent of Koreans aged 65 or more were a college graduate or more.

- According to population projections by educational attainment of the International Institute for Applied Systems Analysis, 39.4 percent of Koreans aged 65 or more are expected to be a college graduate or more in 2050. This percentage is the second highest, which is followed by Japan (47.8 percent).

[Table 15] Percentage of college graduates or more aged 65+, 2000~2050

Share (%)	South Korea	U.S.A	France	United Kingdom	Germany	Japan	India	Brazil	China	Russia
2000	2.8	14.9	7.5	12.6	12.2	9.1	2.0	5.1	1.5	13.4
2010	7.3	20.3	11.2	16.3	16.9	12.5	3.4	6.8	2.8	18.9
2020	12.5	27.3	16.5	22.2	21.3	20.3	5.7	9.4	3.3	23.6
2030	22.6	28.4	20.5	25.6	24.4	31.1	7.2	10.2	4.7	26.6
2040	33.3	29.1	28.7	29.1	23.8	41.5	9.2	9.7	7.0	27.7
2050	39.4	28.7	34.8	31.8	21.1	47.8	10.4	9.0	8.9	27.9

Source: International Institute for Applied Systems Analysis (IIASA),(2010), Projection of populations by level of educational attainment, age, and sex for 120 countries for 2005-2050. Demographic Research: Volume 22, Article 15.

Internet use

○ The acquisition of Information and Communication Technology is a key resource for leading independent lives of the elderly population. About 6 out of 10 baby boomers, who use the Internet, will become the elderly population from 2020.

[Table 16] Internet use rate by age, 2007~2011

Internet use rate (%)	10-19	20-29	30-39	40-49	50-59	60+
2007	98.7	98.9	94.6	77.8	45.6	17.4
2011	99.9	99.9	99.4	88.4	57.4	22.9

Source: Korea Internet Security Agency, Internet Use Survey

Voluntary work

○ Voluntary work by the elderly population is a means of transfer and integration of technologies and experience between generations. The voluntary work participation rate of Korea is lower than that of developed countries. The voluntary work participation rate of the elderly population is lower than any other age group.

[Table 17] Voluntary work participation rates of OECD member countries

Nation	Participation rate (%)	Nation	Participation rate (%)	Nation	Participation rate (%)
South Korea	21.3	Greece	7.4	Portugal	11.9
Australia	37.9	Hungary	6.3	Slovak Republic	12.9
Austria	30.3	Ireland	35.0	Spain	14.8
Belgium	24.0	Italy	21.1	Sweden	12.4
Canada	38.1	Japan	24.7	Switzerland	34.1
Czech Republic	18.2	Mexico	10.3	Turkey	7.5
Denmark	19.7	Netherlands	37.1	United Kingdom	28.7
Finland	27.9	New Zealand	41.5	U.S.A	41.9
France	28.5	Norway	38.9	OECD average	23.8
Germany	22.7	Poland	10.4		

Source: OECD Factbook 2009: Quality of Life (Volunteering and Social Support)