SCL/PRB Index of Well-Being in Older Populations

Final Report
Global Aging and Monitoring Project

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Table of Contents

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Executive Summary

Background and Objectives

In nearly all regions of the world, growth of the population ages 65 and older outpaces total population growth. This shift in the size of the elderly population relative to other age groups challenges existing health services, family relationships, social security, and pension programs. To identify changes associated with population aging and to assess the continuing effectiveness of national programs requires new tools. Evaluating how national government programs, cultural norms, and social and economic factors affect the well-being of the older adults at the national level often requires cross-national comparisons. To facilitate such analyses, the Population Reference Bureau (PRB) and the Global Aging Program at the Stanford Center on Longevity (SCL) have collaborated on creating the SCL/PRB Index of Well-Being in Older Populations, a summary measure of elderly well-being based on comparable cross-national data.

After review of a comprehensive set of well-being indicators for countries across the world, the study team focused on outcome indicators for which comparable data were available and on 12 study countries at similar levels of development—Austria, Belgium, Denmark, France, Germany, Greece, Italy, Netherlands, Spain, Sweden, Switzerland, and the United States. The resulting Index focuses the discussion of elderly well-being on key outcomes and provides a user-friendly measure that summarizes multiple dimensions of elderly well-being. This Index may be used to assess the overall status of older populations and to make cross-country comparisons.

Index Methodology

The SCL/PRB Index aids in assessing the overall well-being of older population groups of one country relative to others and in ascertaining which factors contribute to a country's relative standing. The Index summarizes 12 key indicators of well-being in old age across four domains—material, physical, social, and emotional well-being:

1. Material Well-Being
    - Median household income per capita ($PPP)
    - Percent not in absolute poverty

2. Physical Well-Being
    - Percent with no disability
    - Percent with no difficulty taking medications (living independently)
    - Percent with no difficulty walking a short distance (no functional limitations)
    - Life expectancy at older ages (50-54, 65-69, or 75-79 depending on the age group)
    - Percent not obese

3. Social Well-Being
    - Percent participating in an economic or social activity (socially connected)
    - Percent in contact with at least one child

4. Emotional Well-Being
    - Percent with no report of depression (non-clinical)
    - Suicide rate for older adults (reverse coded)
    - Percent thriving (satisfied with their current life and future prospects)

The SCL/PRB Index is an average of scores across the four domains listed above. Each domain consists of two to five indicators normalized as a percentage of the best observed value among all the countries—also called "best practice"—and scaled from 0 to 100. Domain scores are an average of the scores for indicators within a domain. In comparison to scores resulting from other index methodologies, benchmarking against the

best practice produces results that are relatively easy to understand. To receive a score of 100 for the SCL/PRB Index, a country must have the best value on all 12 indicators. The U.S. score of 88 out of 100 for the 65-74 age group, which puts it at the top among these countries, suggests that even the top ranking countries have room for improvement.

The SCL/PRB Index is based almost entirely on data from surveys of non-institutionalized populations conducted between 2004 and 2006, the Health and Retirement Surveys (HRS) in the United States and the Study of Health, Ageing and Retirement in Europe (SHARE).The main components of the SHARE surveys were designed to be comparable with HRS. Using these data minimizes inconsistencies in cross-national measurements, but the sample sizes for each country varies substantially, ranging from about 1,000 for Switzerland to over 12,000 for the United States. To control for differences in age structure across countries, the Index measures the well-being of older populations in three age groups (50-64, 65-74, and 75+). This report discusses results for the 65-74 and 75+ populations, with limited reference to differences noted between these groups and the 50-64 group. Results for all three age groups are included in appended tables.

Results

The SCL/PRB Index allows us to assess the overall well-being of older population groups of one country relative to others and to identify which factors contribute to a country's relative standing. Key findings include:

- Among this group of countries, the SCL/PRB Index ranks the well-being of U.S. adults ages 65-74 and 75+ as higher than other countries. This result is mostly due to high U.S. scores on social engagement and emotional well-being. High volunteerism and labor force attachment in the United States at older ages mean that the percentage of older Americans actively engaged in a social organization or employed far exceeds that of the next highest scoring country in the social well-being domain, Switzerland and Greece for age groups 65-74 and 75+, respectively.

- Other countries that consistently rank high in overall well-being for the 65-74 and 75+ age groups are Switzerland, Netherlands, Denmark, and Sweden.

- Italy and Spain consistently occupy the bottom two spots in overall well-being for both age groups. On most indicators, these two countries have scores that place them in the bottom half of the countries in this study. Also, despite being considered countries with more traditional family systems, Italy and Spain score among the lowest on social well-being. For example, Italy ranks twelfth (last) on the percent of older adults who are socially connected for both age groups 65-74 and 75+.

- The standing of the countries studied here does not strictly reflect their wealth. In general, Greece's older populations do surprisingly well given that Greece is more similar to Italy and Spain in wealth and educational attainment among its older population than to other countries in the study. Greece ranks sixth on overall well-being in the 65-74 age group and seventh in the 75+ age group. Greece's strong performance is largely a result of its high scores in the social and emotional well-being domains.

- The Index goes beyond material well-being and country rankings reflect this. Germany ranks lower than expected given its level of material well-being. Germany ranks tenth in overall well-being for both the 65-74 and 75+ age groups.

- Although the United States is among the lowest ranked countries in the physical well-being domain for the 65-74 age group, the United States ranks second of twelve in this domain for the 75+ age group. This result stems from a more rapid increase in disability rates with age in other countries than observed for the United States. Cohort differences in obesity in the United States are notable—the 75+ age group has the highest rate of obesity.

- In the United States, material well-being of 65-74 and 75+ adults is lower relative to the material well-being of the 50-64 age group. For the older age groups, the U.S. score represents a much lower percentage of the best practice, 85 and 86 percent vs. 94 percent for the 50-64 group. This result is largely because median household income per capita declines more rapidly with age in the United States than it does in Switzerland, the country with the highest median household income per capita in all three age groups.

- Variation in country domain scores is smallest for physical well-being and is largest for material well-being. This is true for all age groups.

- The SCL/PRB Index methodology is sensitive to countries having extreme values on any indicator (outliers), which the United States does in the social well-being domain. However, sensitivity analyses suggest that while the exact ranking of a country may change with the use of other methodologies designed to reduce the effect of outliers, the general position of countries remains the same. The United States would remain among the top countries, and Italy and Spain would remain ranked the lowest in overall well-being for older adults.

Our results demonstrate that countries have different advantages and face different challenges to improving the overall status of their older populations. No one country is best in every domain or on every indicator, suggesting that it is more helpful in policy and program planning to look at which factors are improving or detracting from a country's relative standing than to be overly concerned with the Index scores and rankings based on these scores.

The SCL/PRB Index provides the first summary measure of the well-being for older populations comparable across countries. The Index has been developed primarily for cross-national comparisons and is based on data available when this analysis first got underway. The results presented here are based on data collected before the global economic recession and do not reflect changes in elderly well-being since 2007. The principles used in developing the Index have produced a robust set of results for these countries and may be extended to several other analyses, including monitoring trends in elderly well-being over time and comparing the well-being of different elderly subpopulations within the same country.

Next Steps

There are several possible extensions to advance the SCL/PRB Index. One extension is to assess the Index's performance among a more culturally and socioeconomically diverse set of countries, both in Europe as well as in other regions. More and more comparative data is becoming available. For example, in Asia, surveys with content largely comparable to the HRS have already been conducted in South Korea and Japan and have been pre-tested in China. In Europe, data necessary to create the Index are now available for nine additional countries, including Czech Republic, Estonia, Hungary, Ireland, Luxembourg, Poland, Portugal, Slovenia, and the United Kingdom. To include more countries will require further data harmonization efforts across countries, including careful attention to how survey samples are drawn and the populations that they represent.

A second extension is to broaden the analysis over time to assess trends as new waves of surveys become available. The HRS, for example, allows comparative analysis dating back as early as 1992. As many as three waves of SHARE surveys have been conducted in many countries in Europe. New waves of HRS and SHARE surveys are added every other year. The extension of the analysis to multiple years would allow countries to chart changes in the well-being of their older populations and compare their progress relative to other nations at similar stages of development. Ultimately, comparable measurement of well-being in older populations over time and across countries will enhance our ability to monitor the effects of social, political, and policy changes on these groups. Finally, this work might be extended by assessing how different subgroups of older adults within countries are faring. This analysis requires datasets with large enough sample sizes. For example, the analyses of elderly well-being across U.S. regions and racial/ethnic groups might provide some insight into disparities within the U.S. older population.

By providing a user-friendly measure that summarizes the complex, multi-dimensional nature of well-being and that can be compared across countries, the SCL/PRB Index fills an important gap. The Index serves as a valuable tool for stakeholders to assess the overall status of older population groups across countries and, potentially, over time. It can thus facilitate deliberation on important issues confronting nations as the world population ages. Having an overall measure of well-being, particularly one focused on outcomes, is an important first step in performing analyses that can determine how older populations are faring. The SCL/PRB Index can also help raise public awareness and both motivate and guide policy decisions that will improve the lives of older persons and the societies in which they live.

I. Introduction

The need for a summary measure of elderly well-being

In nearly all regions of the world, growth of the population ages 65 and older outpaces total population growth. This shift in the size of the elderly population relative to other age groups challenges existing health services, family relationships, social security, and pension programs. Assessing the continued effectiveness of these national programs in the face of population aging requires new tools. Evaluating how government programs and cultural norms affect the well-being of the older population often requires cross-national comparisons. With cross-national data, analysts may assess the impact of policies implemented in some countries but not others or may distinguish universal aspects of aging from the effects of culture, social and political institutions, and variations in policy responses. But such analyses require a summary measure of elderly well-being that is comparable across countries.

The lack of a standard summary measure of well-being for the older population hampers on-going assessments of policies and programs for the elderly and limits the ability of one country to learn from another's experience. To fill this gap, the Population Reference Bureau (PRB) and the Global Aging Program at the Stanford Center on Longevity (SCL) have collaborated on creating the SCL/PRB Index of Well-Being in Older Populations. The SCL/PRB Index summarizes the status of the elderly across multiple dimensions (see Box 1) and allows for the possibility of comparing the well-being of older populations across countries with key differences in policies or programs targeting older people.

Data and measurement

The SCL/PRB Index summarizes key indicators of well-being in old age, adapting indicators and methodology drawn from studies of well-being in a variety of population groups (Box 2). Multiple factors contribute to individuals' sense of well-being. Studies that have assessed subjective well-being tend to consider factors that represent a few specific aspects of life (Cummins 1996; 1997). The following were consistently considered highly relevant to subjective well-being across a wide range of ages and for a variety of populations (Cummins 1996, 1997; Land 2001): material well-being, that is, command over material and financial resources; health; safety; productive activity such as employment, job, work, schooling; community involvement; relationships with family and friends; and emotional well-being.

In the influential book *Successful Aging*, Rowe and Kahn (1968) define successful aging as "the ability to maintain three key behaviors or characteristics: (1) low risk of disease and disease related disability, (2) high mental and physical function, and (3) active engagement with life" (p. 38). These three characteristics take into account factors similar to those considered relevant to subjective well-being, but notably leave out material well-being and safety. The SCL/PRB Index builds on the existing work above by including measures of material well-being to the outcomes that indicate successful aging in older populations, namely, physical well-being, emotional well-being, and social well-being.

Efforts were taken to minimize measurement errors or other confounding factors, such as differences in age structure. Country indicators used in construction of the Index are drawn from sources that provide comparable data for all the study countries: The Health and Retirement Surveys (HRS) conducted in the United States, the Study of Health Aging and Retirement in Europe (SHARE), the Gallup World Poll, WHO mortality tables, and WHO life tables. The HRS and SHARE are the primary data sources for the Index and were conducted between 2004 and 2006. The SCL/PRB Index, therefore, describes the well-being of older adults in the mid-2000s. Although the study team considered using statistics from extant cross-national databases, a meeting of experts reached the conclusion that the aggregated information in many of these databases reflects the specific data needs of individual countries, severely limiting meaningful comparability across countries. Having access to microdata for the HRS and SHARE survey allowed the SCL/PRB team to aggregate data to create comparable indicators.

Cultural and socioeconomic differences may also produce different responses when no underlying difference in well-being exists. The types of indicators that matter to the levels of well-being in old age also likely depend on a country's level of socioeconomic development along with various other factors, including the culture and

political climate of a country. To reduce the extent to which these factors influence results, the team analyzed a select set of Western industrialized countries (Austria, Belgium, Denmark, France, Germany, Greece, Italy, the Netherlands, Spain, Sweden, Switzerland, and the United States) and left out industrialized countries in other regions (such as Japan, South Korea, and Israel) or emerging market countries in Europe (such as Poland, Czech Republic, and Hungary) that also conduct comparable surveys. Restricting the analysis to the 12 countries listed above provides the opportunity to examine how each indicator behaves in a more homogeneous set of nations, before potentially extending it to a more diverse set of nations at a later stage. The SCL/PRB Index is created separately for three age groups above age 50—50-64, 65-74, and 75 and over—to limit the impact of age structure differences on results. Potential cultural differences, differences in population age composition, and small variations in indicator measurement across countries may still produce small differences in the SCL/PRB Index. Caution must be taken, therefore, when interpreting small differences in results across countries. Large differences, on the other hand, do provide valuable information about the relative well-being of older populations in these countries.

The results in this report provide a general overview of how older adults in two age groups (65-74 and 75 or older) in each country fare relative to the “best practice” observed across all countries in the mid-2000s. The report presents results for the overall Index and for each domain: material well-being, physical well-being, social well-being, and emotional well-being. The report also discusses whether the cross-national differences observed for these older age groups are similar to cross-national differences observed for adults in late middle-age, the 50-64 age group.

The report is organized as follows. First, the next chapter presents results for overall well-being, using the SCL/PRB Index. Each of the four chapters that follow examines results for one domain, providing a rationale for the indicators used, a brief review of any important measurement issues, a summary of key findings, and a discussion of policy issues that might shed light on some of the unexpected findings. Particular attention has been given to results for the United States because this country scores highest on the well-being of people 65-74 and 75 and older.

Box 1- Indicators of well-being for older population groups

Initially, the project team considered a wide range of indicators, including some process indicators, such as measures of health care use and access, behavioral risk factors, and socioeconomic status. However, the team decided to limit the analysis to outcome indicators (with the exception of obesity indicator). The Index includes key indicators of well-being in old age for which recent comparable data across countries were available at the time that we started the analysis. The initial decisions regarding indicators and data sources also took into account availability and comparability for key countries in other regions. Although it was not feasible to extend the SCL/PRB Index to other countries at the time, the team hopes to be able to do so in the future. Another factor considered in the development of this Index is the possibility of extending the Index to analysis of trends over time. The methodology adopted to construct the Index may be modified to monitor a country's progress over time.

Domain	Variables
1. Material Well-Being	1.1. Median household income per capita ($PPP) 1.2. Percent not in absolute poverty
2. Physical Well-Being	2.1. Percent with no disability 2.2. Percent with no difficulty taking medications (living independently) 2.3. Percent with no difficulty walking a short distance (no functional limitations) 2.4. Life expectancy at older ages (50-54, 65-69, or 75-79 depending on the age group) 2.5. Percent not obese
3. Social Well-Being	3.1. Percent participating in an economic or social activity (socially connected) 3.2. Percent in contact with at least one child
4. Emotional Well-Being	4.1. Percent with no report of depression (a non-clinical measure) 4.2. Suicide rate for older adults (reverse coded) 4.3 Percent thriving (satisfied with current life and future prospects)

II. The SCL/PRB Index of Well-Being for Older Populations

The SCL/PRB Index aids in assessing the overall well-being of older population groups of one country relative to others and in ascertaining which factors contribute to a country's relative standing. The Index summarizes 12 key indicators of well-being in old age across four domains—material, physical, social, and emotional well-being. The Index scores, domain scores, and indicator scores all show the performance of each country relative to the best practice observed among this group of 12 countries, 11 European countries and the United States.

The scoring system used for the SCL/PRB Index ranges from zero to 100. For any indicator, the best observed value among the countries receives a score of 100. Domain scores are an average of indicator scores within that domain. The Index (composite) score is an average of the domain scores. In comparison to scores resulting from other index methodologies, benchmarking against the best practice produces results that are relatively easy to understand. To receive a score of 100 for the SCL/PRB Index, a country must have the best value on all 12 indicators. Although the U.S. score of 88 for the 65-74 age group puts it at the top among these countries, it is still only 88 of a possible 100.

Overall well-being

The SCL/PRB Index score shows that overall well-being among older American adults is better than overall well-being of older adults in the 11 European countries included in the analysis (Figure 1). The U.S. advantage lies in strong social and emotional well-being among older Americans (Figures 2 and 3). The United States also scores well in material well-being in both age groups, but Switzerland and the Netherlands have the best scores in this domain. The United States has its worst ranking in the physical well-being domain for the 65-74 age group, but this does little to offset its advantage in other domains because the difference between the highest and lowest score for the physical well-being domain is less than 10 percentage points. For the 75 and older age group, the United States ranks near the top in physical well-being.

Figures 2 and 3 lay out the domains arranged vertically down the left hand axis for the 65-74 and 75+ age groups, respectively. The horizontal scale represents the score achieved by the country for each domain. A triangle marks each country score in the domain. The high and low scores are labeled. The scores range between 0 and 100, with 100 representing the best observed value. To score a perfect 100, a nation must lead across all the indicators. For this reason, the best performer in the group is generally less than 100. Tables 1.2, 2.2, and 3.2 in Appendix B provide overall Index and domain scores for all study countries and three age groups (50-64, 65-74, and 75+).

The range of scores across countries varies with each domain, with scores in the physical well-being domain having the narrowest range and those in material well-being having the widest (Figures 2 and 3). For the 65-74 age group, material well-being ranges from a low of 53 for Spain to a high of 99 for Switzerland. Physical well-being ranges from 91 for Spain to 100 for Switzerland. In the social well-being domain, Italy has the low score of 58, and the United States has the high score of 100. In the emotional well-being domain, Germany has the low score of 43, and the United States and Greece tie for a high of 75.

Box 2- Index methodology

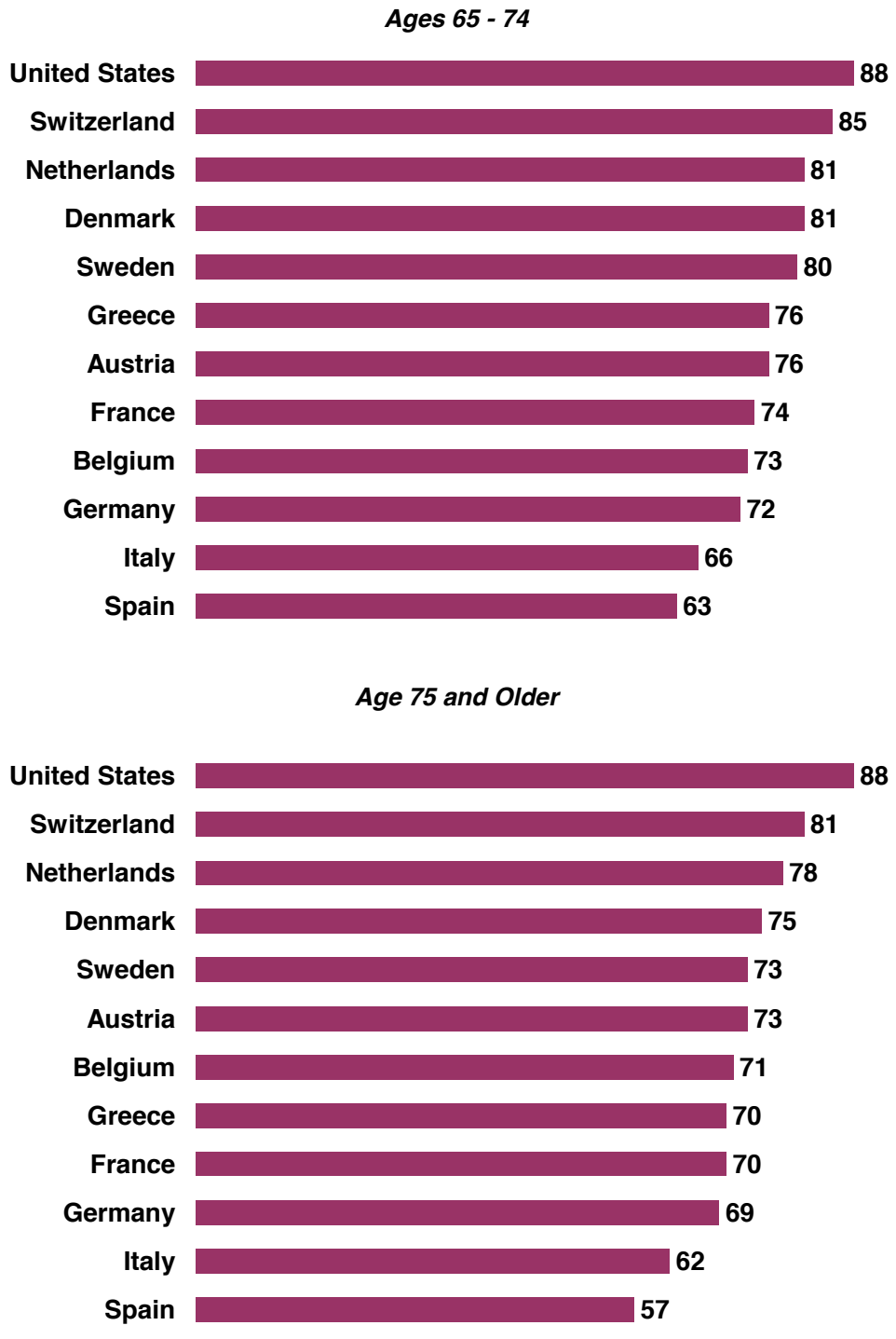
The SCL/PRB Index of Well-Being for Older Populations measures the current status of older adults in three age groups (50-64, 65-74, and 75 and older) for 12 countries, 11 European countries and the United States. The SCL/PRB project team constructed indicators mostly using data from the Health and Retirement Surveys (HRS) conducted in the United States and the Study of Health, Ageing and Retirement in Europe (SHARE).These are population-based surveys with comparable components relevant to the well-being of older populations. The team consulted experts in the process of developing the indicators, the methodology for aggregating them, and verifying the data.

The SCL/PRB Index summarizes the status of older adults across four domains: material well-being; physical well-being (health and disability); social well-being (relationships and active engagement with life); and emotional well-being (mental health and morale). All but one of the twelve underlying indicators measures an outcome. The exception is the percent not obese. Nine of the indicators measure the percentage of the population in the age group in a specified state, such as the percent able to take medications without assistance. Of the remaining three indicators, one, the median household income per capita, is a summary statistic, and the other two are population measures constructed from vital statistics data—life expectancy and the suicide rate. Each indicator, domain score, and the overall Index score is constructed so that a higher value means higher well-being.

The SCL/PRB Index is the average of scores for the four domains. Each domain's score is itself an average of underlying indicator scores. Indicator scores are obtained by normalizing each indicator value as a percentage of the best observed value for that indicator among the study countries. The best observed value is considered the "best practice" and has a score of 100. Because the equal weighting schemes are used to create the Index and the domain scores, varying number of indicators per domain means that the contribution of each indicator to the overall Index score is inversely related to the number of indicators in the domain. Sensitivity analysis shows that the choice of weighting scheme does not affect the general pattern of the findings.

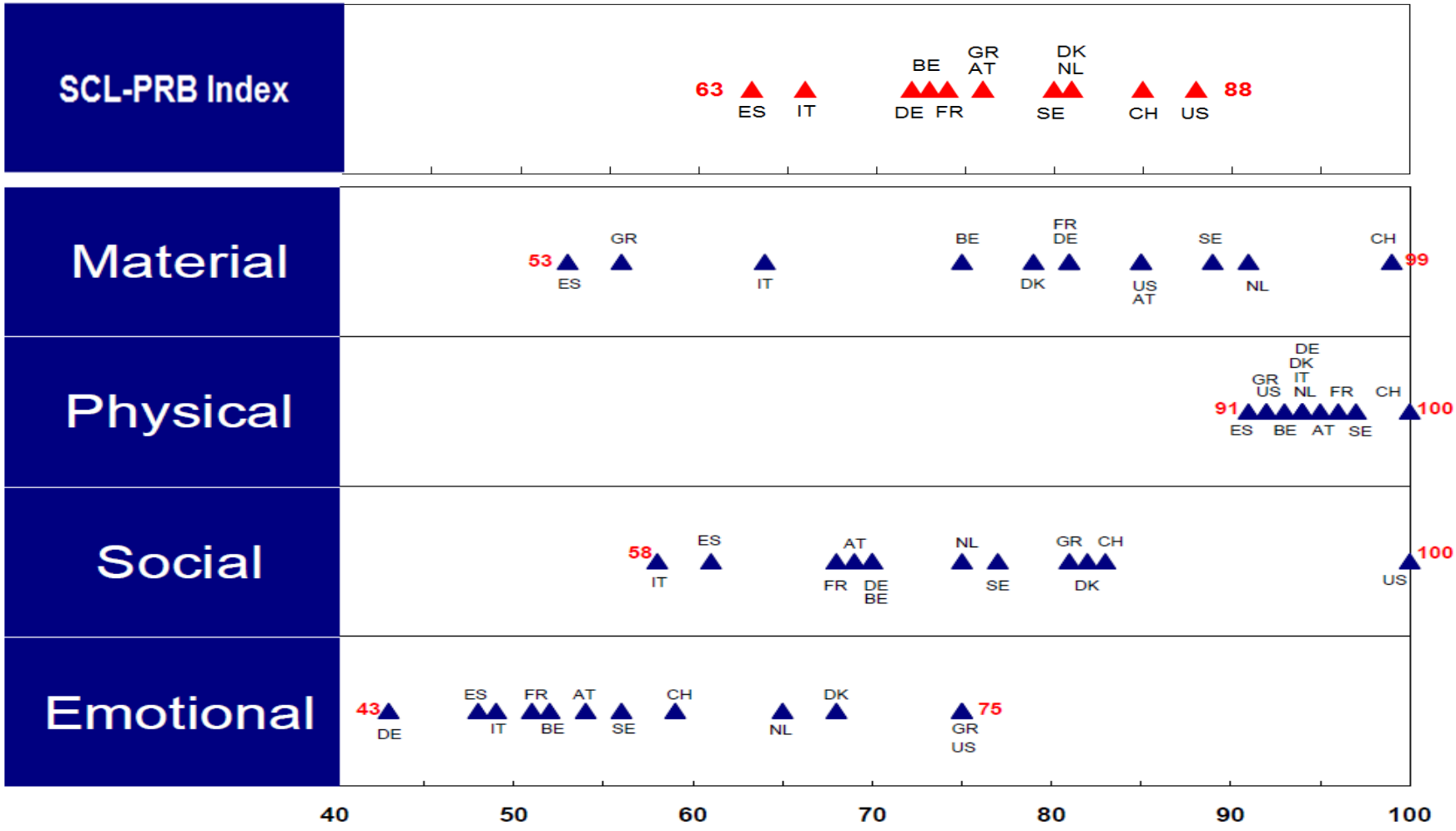
The SCL/PRB Index scores, domain scores, and indicator scores all range from 0 to 100 and are each rounded to the nearest whole number. They have all been constructed so that a higher value means higher well-being. Unless otherwise noted, rankings presented in this report are based on Index scores or domain scores.

Figure 1. Overall well-being composite scores, ages 65-74 and age 75 and older, 2004-2006



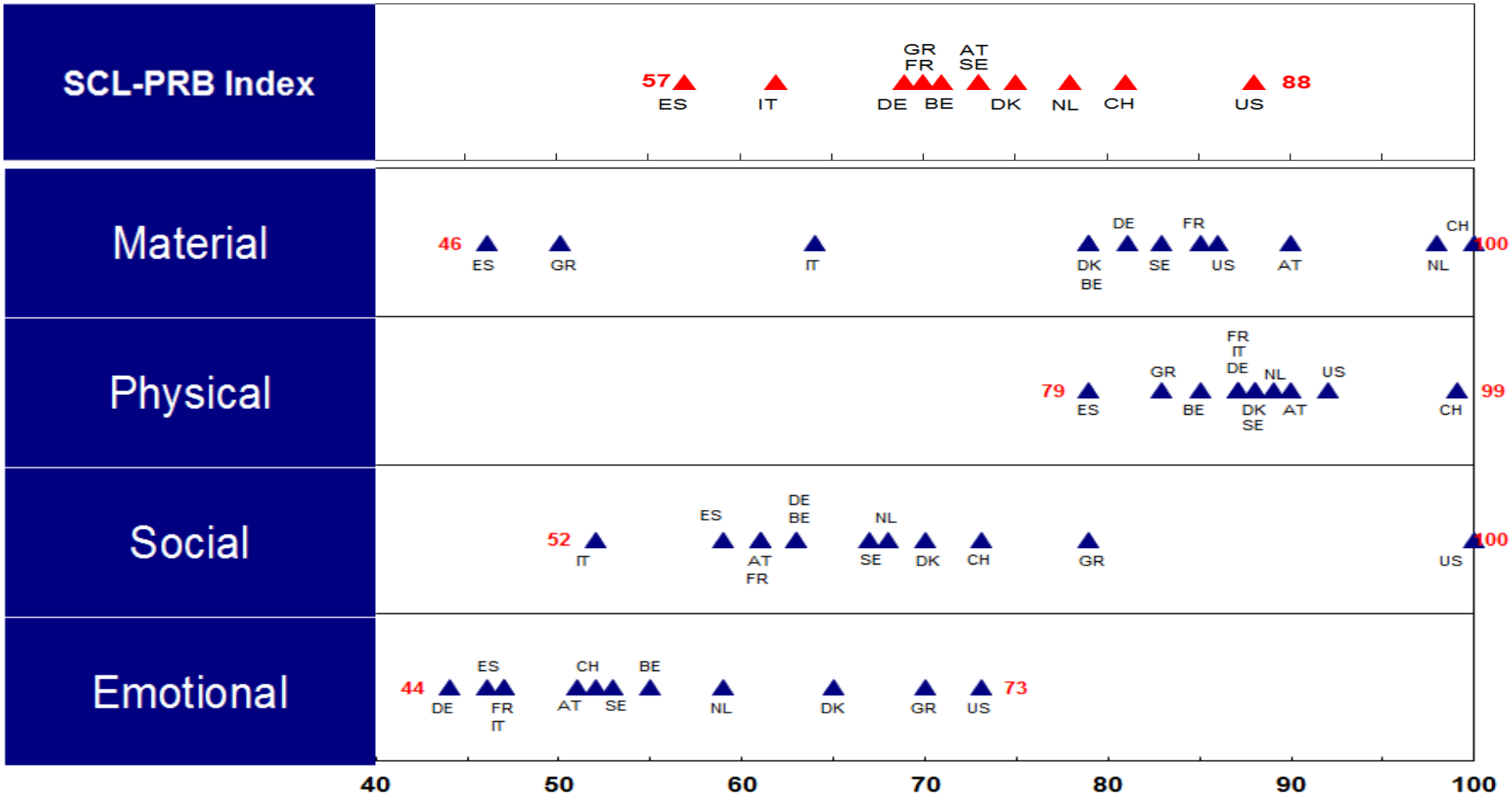
Source: Population Reference Bureau.

Figure 2. Distribution of country scores for SCL/PRB Index and domains for ages 65-74, 2004-2006



Note: AT=Austria; BE=Belgium; DK=Denmark; FR=France; DE=Germany; GR=Greece; IT=Italy; NL=Netherlands; ES=Spain; SE=Sweden; CH=Switzerland; US=United States
Source: Population Reference Bureau

Figure 3. Distribution of country scores for SCL/PRB Index and domains for ages 75 and older, 2004-2006



Note: AT=Austria; BE=Belgium; DK=Denmark; FR=France; DE=Germany; GR=Greece; IT=Italy; NL=Netherlands; ES=Spain; SE=Sweden; CH=Switzerland; US=United States
Source: Population Reference Bureau

High well-being at older ages

For people age 65-74 and 75+, the United States, Switzerland, Netherlands, Denmark, and Sweden score above the other countries in overall well-being. That the United States and Switzerland consistently score highly in overall well-being might not be considered surprising given that they were among the twenty richest countries in the world in 2006 and the wealthiest countries in this group, on a per capita basis. The standing of the countries studied here does not strictly reflect their wealth. In the 65-74 age group, Germany ranks tenth and Greece ranks sixth in overall well-being (see Figure 1). In the 75 and older age group, Greece ranks eighth and Germany tenth.

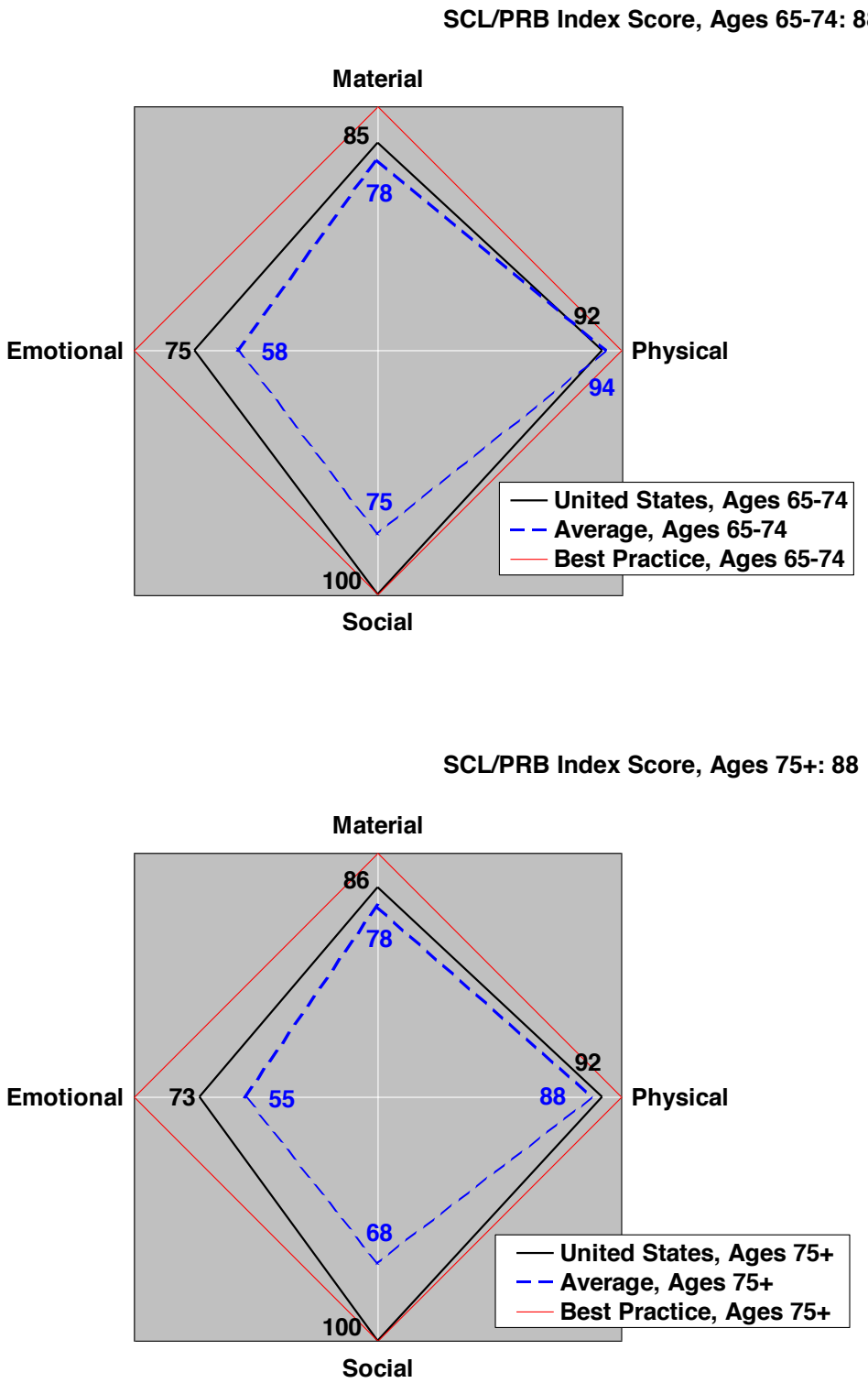
In general, Greece's older population does surprisingly well given that Greece is more similar to Italy and Spain than to other countries in the study with respect to its wealth and educational attainment. Greece's strong performance in social and emotional well-being raises its overall well-being score to 76 for the 65-74 age group and to 70 for the population age 75 and older.

Figure 4 shows the U.S. domain scores, the average score for each domain across countries, and the best practice score in each domain. The best practice domain scores are always 100 and represent a boundary set by the highest value observed in this set of countries for each indicator. Although domain scores for the United States are highest in both the social and emotional domains (see Figures 2 and 3), only in the social well-being domain did it have the highest scores on all indicators as evidenced by a domain score of 100. Although the United States scores above average on all domains for age 75+, it still can improve on some indicators in the material well-being and emotional well-being domains, notably on median income per capita, percent not in absolute poverty, suicide rates, and percent satisfied with their current and future life.

Low well-being at older ages

Among this group of countries, Italy and Spain consistently occupy the bottom two spots in overall well-being for older adults (Figure 1). Rarely do these countries score in the top half of this group for any of the twelve indicators. Also, despite being considered countries with more traditional families, these two countries score the lowest on active engagement in life/social connectedness as measured by participation in social organizations and participation in the labor force. Italy has the lowest score in this category for all three age groups, with a noticeable gap between its score and the next highest.

Figure 4. Domain scores by age group: United States, 12-country average, and "best practice", 2004-2006



Note: The "best practice" is benchmark for what is achievable based on the best observed values for each indicator among this group of 12 countries. For each domain, the best practice score is 100.The composite score for the United States was 88 for both persons ages 65 to 74 and persons age 75 and older.

III. Material Well-Being

Demographic research indicates a strong relationship between the level of wealth and various indicators of well-being, including health and life satisfaction. The SCL/PRB Index uses the following indicators of financial resources to measure material well-being:

- Median household income per capita ($PPP)
- Percent not in absolute poverty

Both indicators are based on household income as measured in the Health and Retirement Study (HRS) and Study of Health Aging and Retirement in Europe (SHARE) surveys. In these data, household income estimates are based on the personal income of all household members as well as household-level income, such as income from assets held jointly and lump sums from insurance, pensions, and inheritances. For the SCL/PRB Index, both the income measure and the absolute poverty threshold used to estimate the percent not in poverty are measured in purchasing power parity (PPP) dollars, which ensures that cross-national differences observed are not the result of price differences between countries.

Measuring income at household levels is important for older adults who may no longer be in the labor force yet live with others, thus, benefiting from income of household members and economies of scale. Financial well-being in old age is largely determined by current and past employment characteristics. Sources of income vary across different groups (men and women; the young-old and the old-old) but generally include public and private pensions, savings, assets, and earnings for persons who remain economically active. The importance of each of these sources of income for older adults varies from country to country. Pension schemes differ across countries with respect to eligibility requirements and funding mechanisms and so does the extent to which these benefits replace pre-retirement income (Gruber and Wise 1999; Bloom et al. 2007).

Taxes, health insurance premiums, and the amount of health care that they buy also vary across countries. As a result, the total cost of health care which is an important expenditure in old age, varies across these high income countries. In addition, the proportion of household income that must be spent on out-of-pocket medical expenditures differs across countries. Compared to countries with similar economies, the total cost of health care per capita is more expensive in the United States. Out-of-pocket expenditures in the United States as a percentage of household income increase from 7 percent to 10 percent after age 65 (Federal Interagency Forum on Aging-Related Statistics 2010).

Absolute poverty among older adults provides an assessment of whether income sources are enough to meet basic needs such as food, clothing, and shelter. In this study, households with income at or above purchasing power parity (PPP) of the official U.S. poverty threshold for the year in which the data was collected were considered not poor. The U.S. poverty thresholds used take into account household size and income. They range from $9,973, or $27 per day, for a household of one to $40,288, or about $12 per person per day, for a household of nine. The official U.S. poverty threshold for any given year is based on Orshansky's "three-times-the-cost-of-the-food-plan" calculation in 1963, updated for price changes using the U.S. Consumer Price Index (CPI). These thresholds do not explicitly take into account the need for specific expenditures such as health care, and the household income used here to determine poverty status has not been adjusted for social transfers or taxes. Implications of using this absolute poverty threshold are discussed at the end of this chapter.

International comparisons often rely on a relative poverty measure (as opposed to an absolute poverty measure) because most countries do not have an absolute poverty measure. In addition, when there is a wide disparity in gross domestic product per capita, an absolute poverty threshold tends to produce extremely high poverty levels in some countries and extremely low poverty in others. Because most of the nations examined here are all relatively wealthy, and because the income measure and the absolute poverty threshold used here are both available in purchasing power parity dollars, the poverty indicator—a common absolute poverty threshold—used in the SCL/PRB Index is less subject to these disadvantages.

Relative poverty rates are usually estimated as the proportion of individuals whose income is at least a specific percent (usually 50 or 60) of median income. The rates are, therefore, generally lower in countries

with a more equal distribution of income. Based on analyses not shown here, relative poverty among the study countries would all be in the double digits, ranging from 15 to 38 percent of people age 65 and older being in poverty. Among these countries, the United States, Belgium, and Greece have the highest relative poverty among the elderly, suggesting that they have the highest levels of inequality.

One particular disadvantage of a relative poverty indicator is that poverty rates based on a relative measure may stay the same or improve even as individuals are able to afford less and less. For example, even if all incomes fall proportionately, the relative poverty rate stays the same. Similarly, if only the income of some individuals with median income or lower falls, it is still possible for relative poverty rates to improve. By using absolute poverty rates rather than relative poverty rates, the SCL/PRB Index takes into account the power that older people have to buy what they may need in goods and services, not just whether they have more or less purchasing power, on average, relative to others in the same country.

Table 1 Material well-being scores and rank, by age group and country

Country	65-74		75+	
	SCORE (0 to 100)	RANK	SCORE (0 to 100)	RANK
Austria	85	4	90	3
Belgium	75	9	79	8
Denmark	79	8	79	8
France	81	6	85	5
Germany	81	6	81	7
Greece	56	11	50	11
Italy	64	10	64	10
Netherlands	91	2	98	2
Spain	53	12	46	12
Sweden	89	3	83	6
Switzerland	99	1	100	1
United States	85	4	86	4

Overall material well-being

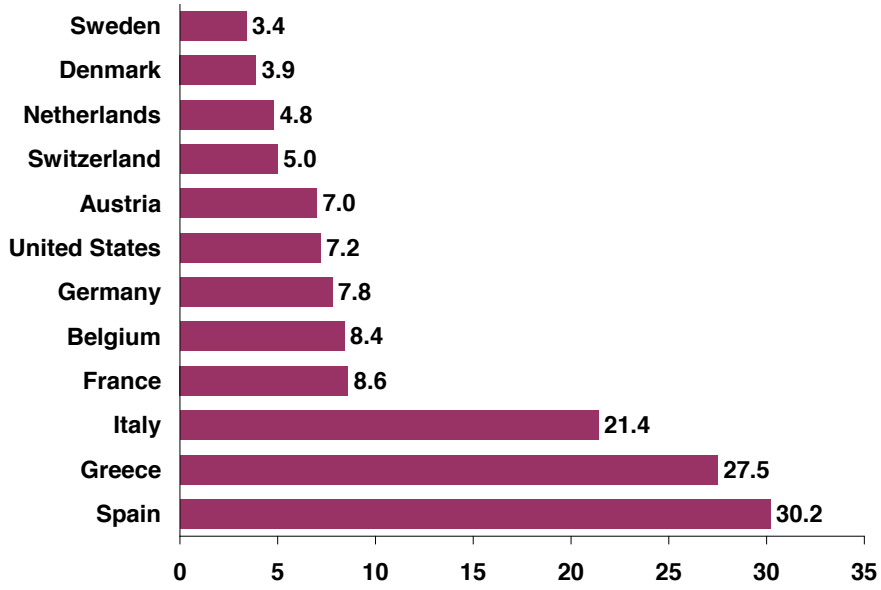
Switzerland is the clear leader in the material well-being domain for older adults, while Spain, Greece, and Italy consistently across age groups make up the bottom three countries. The United States consistently falls among the top four countries. Its domain score of 85 out of 100 in the 65-74 age group, for example, means that the level of material well-being for the U.S. adults in this age group is 85 percent of the potential level of well-being that might be achieved, that is, the highest level observed across all domain indicators among the study countries. The study countries vary substantially in their levels of material well-being as measured by median household income per capita and percent not in absolute poverty. The scores for this domain have the widest spread across all domains, going from a low score of 53 to a high of 99 in the 65-74 age group and from 46 to 100 in the over-75 age group (Table 1).

Switzerland's score of 100 in the 75+ age group signals that this country had the best values on both domain indicators. In general, these two indicators are highly correlated: a country with a high score on median household income per capita is also likely to have a high score on the percent not in absolute poverty.

Comparison of elderly adults to adults in late middle-age (50-64) suggests that the elderly in the United States do not fare as well in material well-being as this younger cohort does. For most countries, the material well-being rankings for the older age groups improve upon or stay the same as the ranking for the 50-64 age group (see Tables 1.3, 2.3, and 3.3 in Appendix B). Material well-being rankings for Austria, France, and the Netherlands improve with age largely because median household income per capita in these countries does not decline significantly with age. The highest median household income per capita observed among all the study countries declines for each older age group, going from PPP $29,185 to $27,499 to $22,021. Only in Denmark, Sweden, and the United States do older adults score lower on material well-being than adults ages 50-64. Median household income per capita declines more rapidly with age in these countries, particularly Denmark and the United States, than it does in Switzerland, the country with the highest median household income per capita in all three age groups.

Among the group of countries for which the SCL/PRB Index has been calculated, several notable patterns emerge in the underlying poverty rates. The Netherlands and Switzerland have dramatically declining absolute poverty rates observed with each older age group. In Greece, Italy, Spain, Denmark, Sweden, and the United States, absolute poverty rates appear to increase with each older age group, albeit that these poverty rates are in the double digits for the Southern European countries and single digits in Sweden and the United States. In the remaining countries, poverty rates are highest for the over-75 age group and lowest for the 65-74 age group.

Figure 6. Absolute poverty rates for older adults ages 65-74, by country



Note: Absolute poverty rate based on U.S. threshold for elderly households in year for which income data was collected.

Source: Population Reference Bureau.

Sensitivity analyses

Despite all efforts to ensure comparability, some of the cross-national variation in material well-being may be related to differences among the countries in how well the questions capture all sources of income available to elderly households. In addition, willingness to respond to questions about income varies across countries. An alternative approach uses the countries' average rankings on indicators in the domain to determine overall standing in the domain. In other words, each country is ranked based on the average of its *rankings* for each indicator rather than the average of its *indicator scores* for each domain. This approach is less sensitive to extreme differences in indicator values (i.e. outliers) across countries. The analysis shows that the country rankings based on this alternative method are generally comparable to those based on the method described in Box 2 and discussed in the body of this report, especially with respect to the countries ranked at both ends of the spectrum (see Tables 2 and 3 in Appendix C). The Netherlands and Sweden have the highest rankings for the 65-74 age group, and Switzerland has the highest ranking for the 75+ age group. Italy, Greece, and Spain have the lowest rankings for both age groups. The United States' average ranking would place it fourth for both cohorts, tying with Austria and Denmark in the 65-74 cohort.

Effects of social safety nets and pensions

While people of all ages are vulnerable to falling into poverty, older individuals may face greater difficulty in escaping poverty because of mandatory retirement ages, age discrimination, and physical limitations that may narrow employment opportunities. In general the risk of poverty among households that are more reliant on wage earnings is relatively low in European countries and the United States. Poverty among wage earners is higher in Southern Europe and the United States than in other Western European countries (Notten and de Neubourg 2007). When absolute poverty is measured using the Orshansky method as adopted in the United States, households with social security and/or private pensions as the main source of income are generally more likely to be poor, especially in Southern Europe. In Sweden and the Netherlands, pensioner households are among the financially better off. In the United States pensioner households have lower poverty risk than other U.S. households.

The system of social safety nets available for the poor also varies greatly from country to country. Some countries rely more on pensions than on other social benefits, including family allowances, other social insurance benefits and social assistance, to reduce poverty. One analysis (using the Orshansky method) finds that, all else equal, pensions reduce poverty rates by more than 40 percent in Austria, Belgium, Denmark, Germany, France, Italy, the Netherlands, and the United States (Notten and de Neubourg 2007). In the United States, the poverty reduction effect of pensions is more than seven times that of other social transfers, a 47 percent reduction compared to a 6 percent reduction in poverty rates. In the Notten and de Neubourg study (2007), the poverty reduction effects of pensions versus other social transfers could be estimated for all the countries included in this analysis except Switzerland and Sweden. Among these countries, only Italy and Greece rely as heavily on pensions for poverty reduction as the United States does.

The relationship between health and earnings and between earnings, pensions, and absolute poverty suggest that better health among older adults has the potential to translate into lower risk of poverty in older populations. Older adults who are able to work would need jobs and a secure means of saving for the future, whether through contributions to employer or publicly funded pensions or sound investment of defined contributions.

IV. Physical Well-Being

Health affects one's ability to care for oneself, to stay active and productive, and to live independently in the community. Poor health directly and indirectly diminishes happiness and overall satisfaction in life (Easterlin, 2003). The SCL/PRB Index uses measures of disability, independent living, physical functioning, life expectancy, and obesity to summarize the overall health in older populations across societies. The specific indicators are:

- Percent with no disability
- Percent with no difficulty taking medications
- Percent with no difficulty walking a short distance (no functional limitations)
- Life expectancy at older ages (50-54, 65-69, or 75-79 depending on the age group)
- Percent not obese

Disability is typically measured by the ability to perform Activities of Daily Living (ADLs), a set of basic daily activities necessary for self-care, such as bathing, dressing, eating, and toileting (Katz et al. 1963). The ability to live independently is often measured with the ability to perform Instrumental Activities of Daily Living (IADLs), a set of activities that are generally more complex and require higher levels of physical or mental abilities than those encompassed by ADLs, such as shopping, preparing meals, managing medication, and using public transportation (Lawton and Brody 1969). For example, managing medication requires keeping track of medications and taking prescribed dosages at correct times. Among the IADLs measured across surveys in different countries, taking medications is one measure that is consistently asked and that offers similar implications across a variety of cultural contexts. Furthermore, it is correlated with the ability to perform other IADLs.

We measure physical functioning by whether one can walk a short distance without any difficulty. The exact reference to short distance used is one block in the U.S. survey (HRS dataset) and 100 meters in the European surveys (SHARE dataset).

Life expectancy, the expected number of years remaining in life at a given age (or age group), is a summary measure of population health. Vast improvements in sanitation, nutrition, and medicine in the last century have led to large gains in life expectancies at birth through reducing the rates of infectious diseases in much of the world. With future gains from reduction in infectious diseases expected to be much smaller than in the past, the greatest improvement in life expectancies will likely come at older ages and be achieved by reducing rates of chronic diseases. This is especially the case in industrialized countries where overall mortality is low and where most deaths occur among older adults (Deaton 2006).

Obesity has reached epidemic proportions in many countries and is a major contributor to the global burden of chronic disease and disability. Obesity is not an outcome but a risk factor and has numerous serious health consequences, ranging from increased risk of premature death to serious chronic conditions that reduce the overall quality of life, including type II diabetes, cardiovascular disease, hypertension and stroke, and certain forms of cancer. Although being modestly overweight may actually increase the odds of survival among older persons by providing nutritional reserves during recovery from illness (Flegal et al. 2007), obesity is generally shown to elevate the risks of morbidity, functional limitations, and mortality even in old age (Alley and Chang 2007; Dolan et al. 2007; Flegal et al. 2007; Jenkins 2004).

The United States has by far the highest spending not only among the study countries but also in the world. The differences compared to the second highest country are striking--it spends almost five percentage points more of its GDP, over US$2,900 more per capita, on health care than the second highest country. More than half of U.S. health care spending is from private sources, though public spending still remains large as a percent of GDP.

Table 2 Physical well-being scores and rank, by age group and country

Country	65-74		75+	
	SCORE (0 to 100)	RANK	SCORE (0 to 100)	RANK
Austria	95	4	90	3
Belgium	93	9	85	10
Denmark	94	5	87	5
France	96	3	87	7
Germany	94	5	87	7
Greece	92	10	83	11
Italy	94	5	87	7
Netherlands	94	5	89	4
Spain	91	12	79	12
Sweden	97	2	88	5
Switzerland	100	1	99	1
United States	92	10	92	2

Overall health and disability

Scores for the physical well-being domain of the SCL/PRB Index are generally high for the current set of countries, and the variance is small. Switzerland ranks at the top and Spain ranks at the bottom in both age groups, but the domain scores for these two countries are only around 10 to 20 percentage points apart in each age group. The narrow range in the physical well-being domain scores produces an interesting result: with the same domain score, the United States ranks second for the over-75 cohort but second from the bottom for the 65-74 cohort.

Rankings for individual indicators in the domain reveal that the United States does much better in its rankings in the older age group than in the younger age group in the indicators on taking medications, walking, and life expectancy, which explains the large difference in rankings between the two age groups. In contrast, the U.S. ranking is consistently high for the percent with no disability and consistently low for the percent not obese in both age groups.

Countries' physical well-being rankings of adults age 65-74 are similar to their rankings in this domain for the middle aged, ages 50-64 (see Tables 1.3, 2.3, and 3.3 in Appendix B). The main exception to this finding is that the United States ranks even lower among the middle aged than among the 65-74 age group, twelfth rather than tenth. Results show that disability rates increase less rapidly between age 50-64 and age 65-74 in the United States than in Switzerland, the best practice country for these two age groups. Obesity rates in the United States are also higher, relative to best practice, at younger ages.

Sensitivity analyses

For the Western industrialized countries included in this analysis, physical well-being results are tightly clustered, so there is less concern about the effect of extremes on the rankings. The alternative methodology, based on average indicator rankings, produces country rankings consistent with the rankings that result from the methodology adopted for the SCL/PRB Index. Average indicator rankings in this domain also place Switzerland ahead of other countries and Spain and Greece at the bottom for the 65-74 and 75+ age groups. The 75+ age group in the United States is no longer ranked the second but is still ranked sixth when this alternative methodology is used (see Tables 1-3 in Appendix C).

Health behaviors and health care access

In addition to the effect of differences in the prevalence of obesity as noted above, cross-national differences in health likely reflect a wide variety of factors for which the SCL/PRB Index does not control, including national differences in health care access, health behaviors, and conditions of early life (Crimmins and Finch 2006; Case, Fertig, and Paxson 2005; Hayward and Gorman 2004; Doblhammer 2003; Burns 2000; Elo and Preston 1992). Health care access, avoidance of risky behaviors, and low exposure to infections or poor living conditions early in life are thought to increase life expectancy and lower the risk of disease and disability that may impair physical functioning.

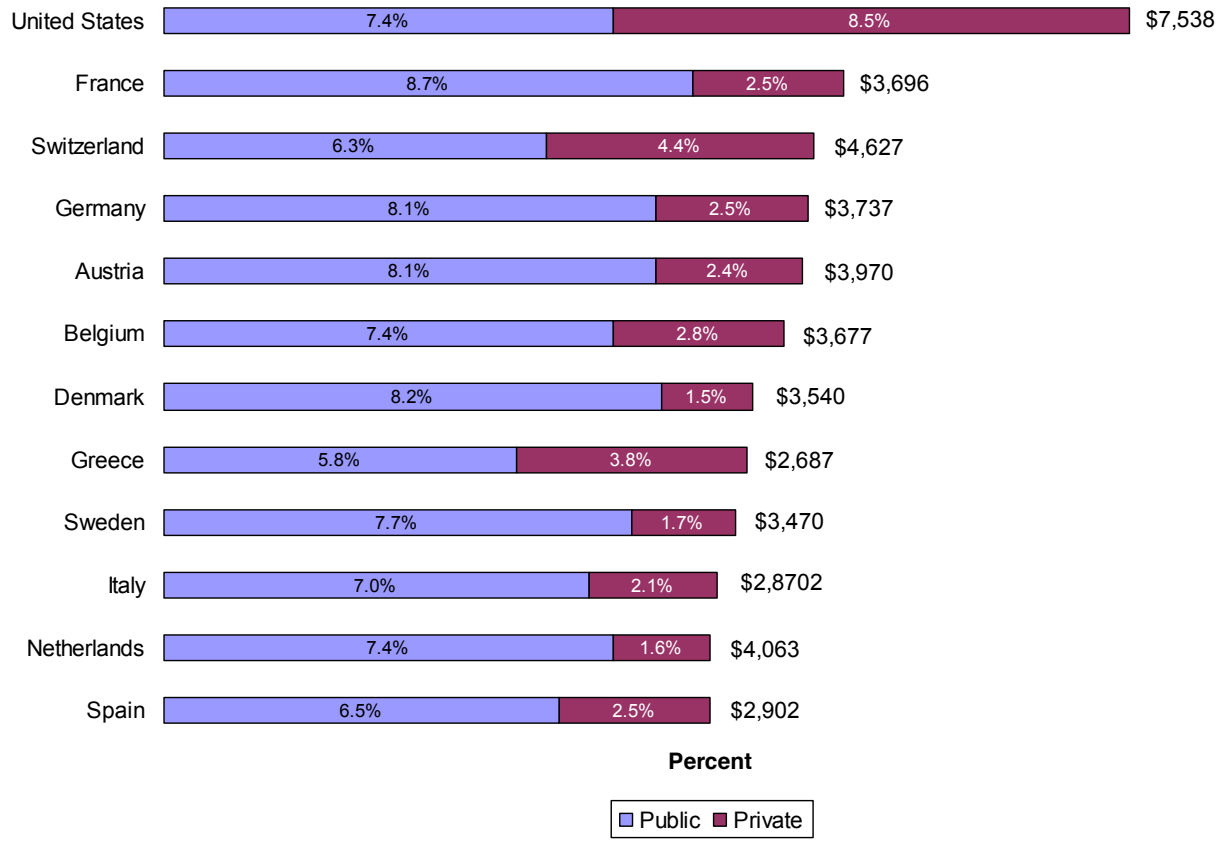
Elderly populations in all the study countries have wide access to health care, though wide variation exists in how medical care is organized, delivered, and financed across countries. Denmark, Italy, and Spain have single-payer national health systems under which health care is provided and financed by the government with tax payments. Austria, Belgium, France, Germany, the Netherlands, and Switzerland have a system based on a social insurance model that uses an insurance system usually financed jointly by employers and employees through payroll deductions. Greece has a mixed system based on a social insurance model and a single-payer national health system. Sweden has features of both a national health system described above and a single-payer national health insurance scheme under which individuals receive care from private-sector providers who are reimbursed by a government-run insurance program in which all citizens participate.

Unlike all the countries discussed above, the United States has no single health care system for all its citizens. Medicare is a single-payer national insurance program available to U.S. citizens or permanent residents age 65 and older if they or their spouse worked for at least 10 years in Medicare-covered employment. Medicare is also available to persons under age 65 who have a disability or permanent kidney failure requiring dialysis or a transplant. Prior to age 65, able-bodied younger adults and their dependents rely on either employer-based health benefits or on those benefits available through social insurance schemes administered by individual states. Care available for veterans is similar to a single-payer national health service system. All others must pay for care out-of-pocket or rely on safety-net providers unless they qualify for means-tested insurance programs (e.g., Medicaid).

Countries also differ with respect to individual out-of-pocket health care costs and quality of care. For example, Medicare only accounts for about a half of the health care costs for older adults, leaving the U.S. elderly with high out-of-pocket health expenditures (Federal Interagency Forum on Aging-Related Statistics 2010). Out-of-pocket health expenses can affect the ability to obtain quality care and health outcomes, as well as the amount of other necessities individuals can afford and the quality of life in old age.

Figure 7 presents national expenditures on health care for the study countries. According to the OECD, growth in health care spending has been greater than economic growth in almost all OECD countries in the past 15 years (OECD 2010). Most of the countries shown here spend around ten or eleven percent of GDP on health care. Roughly three-quarters of health care spending is funded from public budgets in most of these countries.

Figure 7. Public and Private health care expenditures as a share of GDP & total per capita in $PPP, 2008 or latest year available



Source: OECD HEALTH DATA 2010

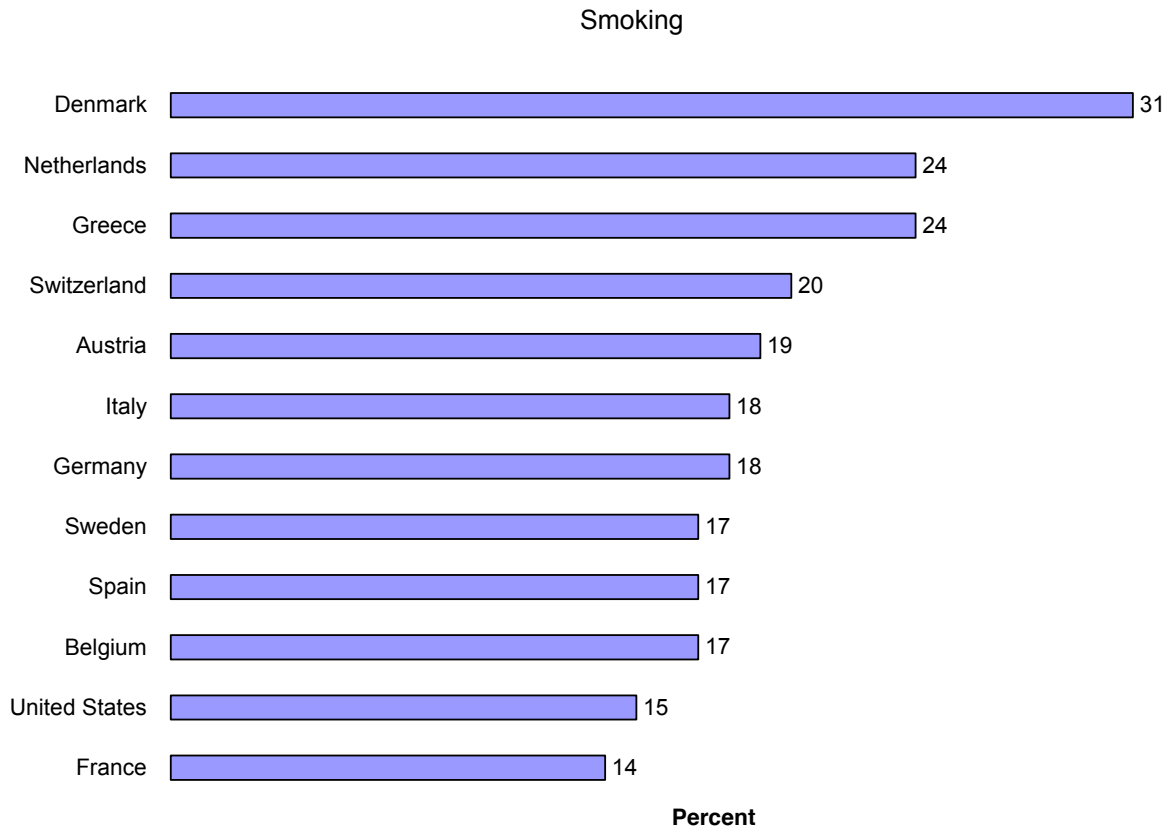
The link between physical well-being and characteristics of health care systems is weak. For example, despite its high health care spending, the United States ranks near the bottom for the 65-74 age group. Also, France, despite having among the highest health care spending, ranks below average in the 75+ age group for the domain. Research on a larger set of countries examining both within and across countries has indeed found mixed results for the relationships between health care spending and health outcomes (Nixon and Ulmann 2006; Asiskovitch 2010).

The current cohorts of older adults were generally exposed to poor nutrition and infectious diseases growing up. They also experienced the Great Depression and/or World War II in their childhood or early adulthood with potentially lasting impacts on health in old age. The extent of the impact of these events and conditions, and the time period during which the countries were particularly affected varied and likely resulted in differential impacts on the older adults across countries today. There are also cohort differences in these early life experiences within the older populations of each country. As living standards improved, childhood exposure to infectious diseases and poor nutrition declined over time in many countries (Catalano and Bruckner 2006). The health of cohorts both within and across countries was, thus, affected differently depending on the age and time period of exposure to these conditions.

Differences in the prevalence of health-related risk behaviors provide possible explanations for some of the results in the physical well-being domain above. Behaviors, such as smoking, heavy drinking, and not exercising, have well known chronic health consequences, such as heart disease, stroke, and cancer (Lopez et al. 2006). Chronic diseases are the main health challenges faced by older adults and often result in functional difficulty and disability, outcomes measured as part of the physical well-being domain.

The prevalence of these health risk behaviors differs substantially across countries (Figures 8–10). For example, older Spanish adults have the lowest physical well-being domain scores and also rank high on the percent who drink heavily and who are sedentary. Switzerland ranks at the top in the domain and ranks at the bottom for the percent who are sedentary. It also has relatively high percentages of smokers and heavy drinkers. The United States has relatively low percentages of smokers and heavy drinkers, though its rankings were mixed for the two age groups. Factors that influence the prevalence of these behaviors include the price of tobacco and alcohol, policies toward them, inequality in the population, and what is widely known and accepted in the population about the health consequences of these behaviors (Cutler and Glaeser 2006). In older adults, it is not only current risk behaviors but also the history of health behaviors and disease over a lifetime that contributes to current health status. The significant cross-country variation suggests ample room for improving health by promotion of health behaviors, particularly for the future cohorts of the elderly.

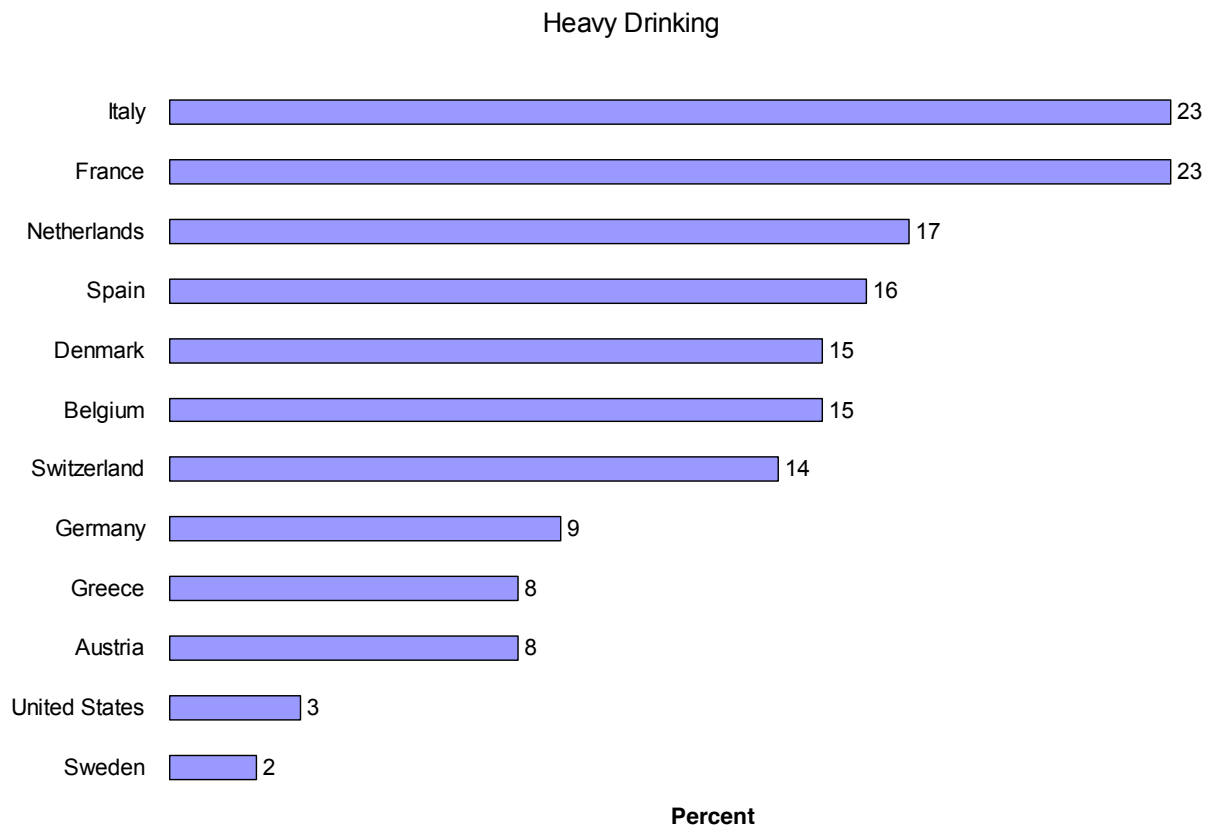
Figure 8. Percent of adults age 50 and over who currently smoke



Source: SHARE 2004 and HRS 2006

Note: Smoking is defined as percent of older adults age 50 and over who currently smoke any cigarettes

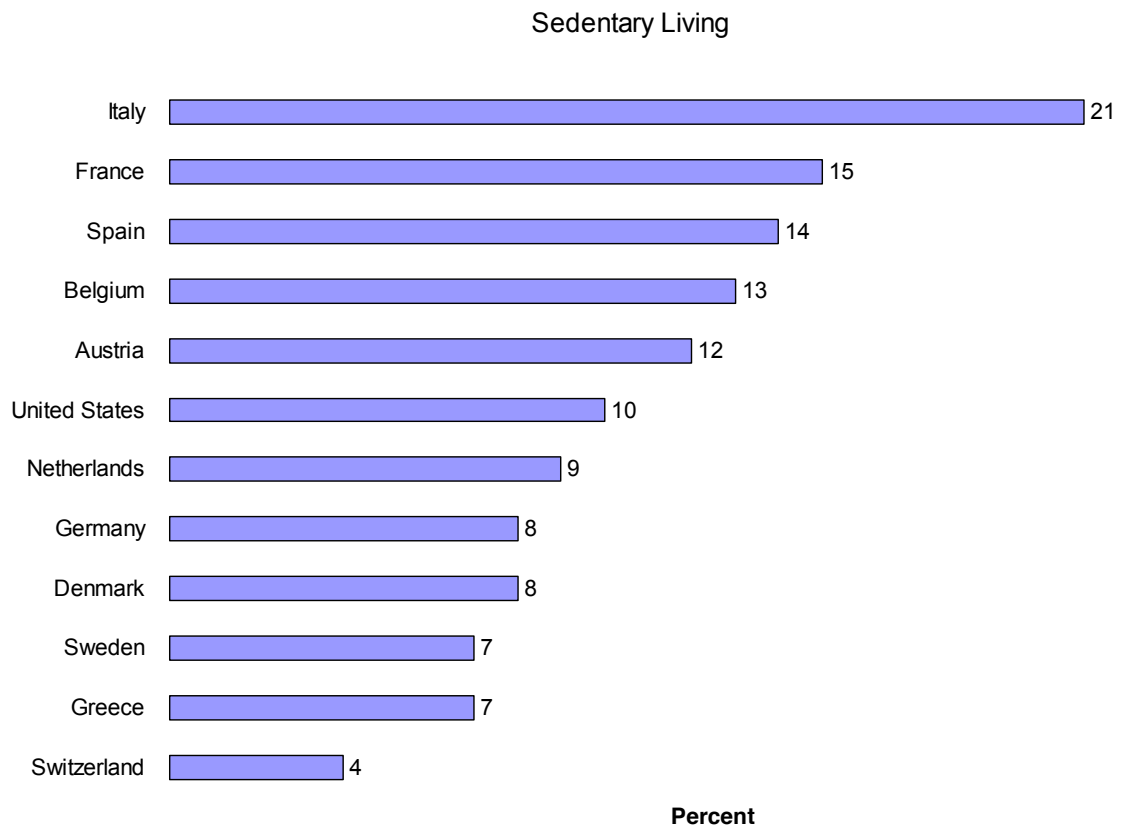
Figure 9. Percent of adults age 50 and over who currently drink heavily



Source: SHARE 2004 and HRS 2006

Note: Heavy drinking is defined as percent of adults age 50 and over who drink three or more glasses of alcohol a day and/or drink more than five days a week

Figure 10. Percent of adults age 50 and over who currently are sedentary



Source: SHARE 2004 and HRS 2006

Note: Sedentary living is defined as percent of adults age 50 and over who exercise less than one time per week and do not have a job that requires at least moderate physical activity

V. Social Well-Being

The social well-being domain captures social engagement, encompassing involvement with family members, peers, community members, and local institutions. Social engagement in old age is associated with better health and greater life satisfaction. In the SCL/PRB Index, it is measured using two indicators:

- Percent participating in an economic or social activity (e.g., employment, community or religious organizations, social clubs, volunteer work)
- Percent having contact with at least one child

There are various ways in which social engagement in old age may improve well-being. For example, contacts gained from engaging in social activities have well-documented benefits for health, including lower mortality (House, Landis, and Umberson 1988). Research suggests that being embedded in social networks has a protective influence on physical health. Having a productive role as an employee or a volunteer may also provide emotional gratification and a sense of power and prestige that can have a positive impact on one's well-being (Moen et al. 1992). Studies suggest that volunteering even a small amount of time has health benefits among older persons, including better self-rated health and lower mortality (Morrow-Howell et al. 2003; Musick and Wilson 2003; Van Willigen 2000). The mere physical activity required to participate in activities can also benefit health since physical activity is important for maintaining health in old age (Carlson, Seeman, and Fried 2000; Chambre 1987).

Contact with family and friends is an important way for older adults both to receive and to provide social support. Children typically make up the largest part of one's social support network and provide the main source of informal caregiving in old age. As widely documented, having close relationships with adult children also has a beneficial impact on psychological well-being (Koropeckyj-Cox 2002; Connidis and McMullin 1993; Silverstein and Bengston 1991; Umberson 1992). The measure used in this study does not distinguish between co-resident and other children. Of course, countries with a higher prevalence of multigenerational households would be expected to report a higher frequency of contact between elderly parents and adult children, but our measure does not distinguish frequency of contact among the countries because of data comparability issues.

Regardless of the reasons older persons choose to work, work provides an important way in which they remain socially active. Factors affecting one's decision to work in old age are varied. The legal age of retirement in public pension systems plays some role, as do financial incentives related to retirement and the availability of employment opportunities for older workers. Wealth and health status also have some effects, though generally small. Spouse's employment status may also affect retirement decisions of married individuals.

Table 3 Social well-being scores and rank, by age group and country

Country	65-74		75+	
	SCORE (0 to 100)	RANK	SCORE (0 to 100)	RANK
Austria	69	9	61	9
Belgium	70	7	63	7
Denmark	82	3	70	4
France	68	10	61	9
Germany	70	7	63	7
Greece	81	4	79	2
Italy	58	12	52	12
Netherlands	75	6	68	5
Spain	61	11	59	11
Sweden	77	5	67	6
Switzerland	83	2	73	3
United States	100	1	100	1

Overall engagement in active living

The social well-being domain scores vary widely across countries within each age group. The United States is consistently ranked at the top and Italy is ranked at the bottom. A domain score of 100 for the United States indicates that on both indicators, percent participating in a social or economic activity and percent in contact with at least one child, the United States has the highest score. Italy's domain scores suggest that, on average, the level of social engagement among the Italian elderly is a little over half the level of the United States in this domain.

Examining the individual indicators separately offers some insight into the overall domain rankings of countries. The indicator values for social participation show that the percent of older adults with some social participation is surprisingly low for most countries (see Tables 1.1, 2.1, and 3.1 in Appendix B). In the 65-74 age group, only in Denmark, Greece, Switzerland, and the United States do more than fifty percent of older adults participate in social or economic activity as defined here. In the over-75 age group, only the United States has more than fifty percent of adults with some social participation. The United States leads in both age groups by strikingly large margins—about a half to two-thirds higher than the country with the next highest score—and this explains why the United States ranks at the top of this domain.

Comparison of country rankings for the middle-aged (50-64 age group) to the above findings for older adults shows a similar pattern of results. France and Sweden stand out with much higher rankings in the younger cohort than in the older cohorts. Social participation in France declines more rapidly with age than it does in the United States. In the United States, social participation drops from 92 percent in middle aged cohort to 80 percent in the oldest cohort. In France, social participation drops from 69 percent to 26 percent. In Sweden, it drops from 84 percent to 31 percent.

Sensitivity analyses

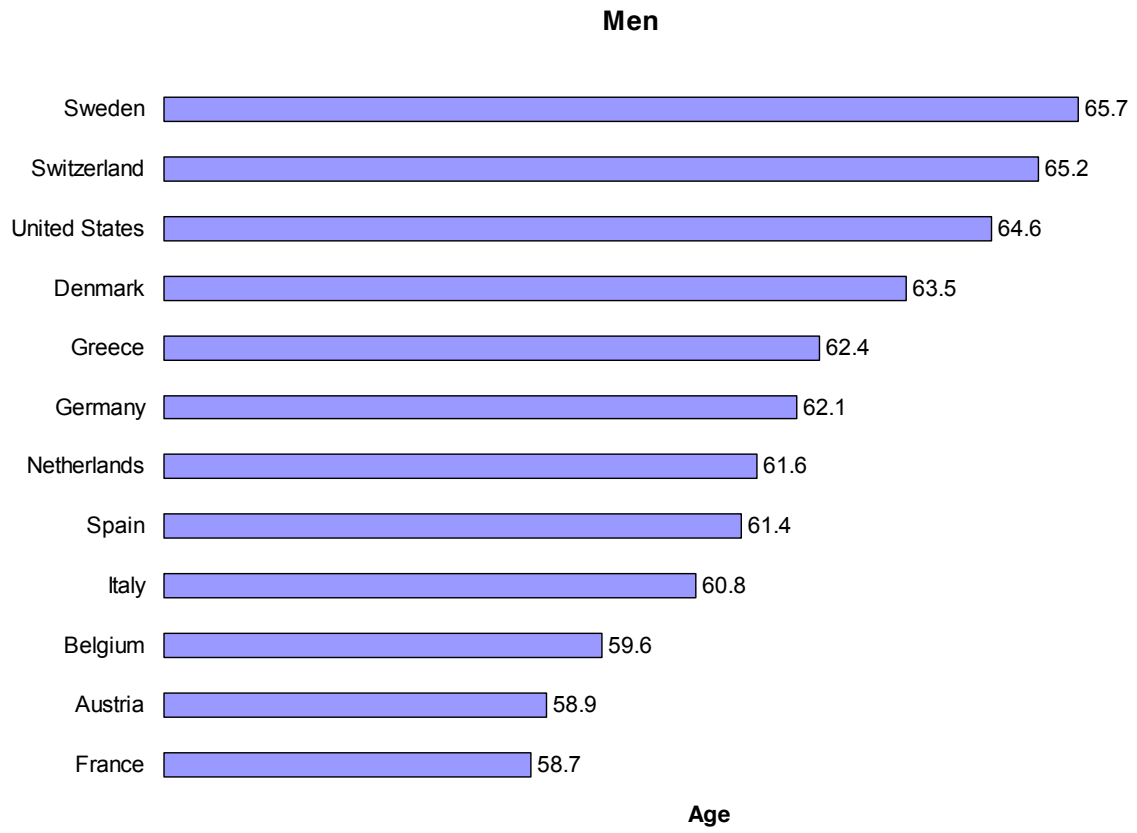
The much higher score for the United States, relative to other countries in the social well-being domain, may partly stem from slight differences in the survey questions or cultural differences in the propensity to report work or volunteering at older ages. Even when using the alternative methodology that is less sensitive to extreme indicator scores (i.e., average rankings of indicators in the domain), the United States and Greece

rank first and second for both the 65-74 and 75+ age groups (Greece tied for second with Denmark in the 65-74 group). The overall well-being of the oldest cohort is best in the United States because of its high average ranking across indicators in this domain and in the emotional well-being domain (see Tables 1-3 in Appendix C).

Labor force attachment and volunteerism

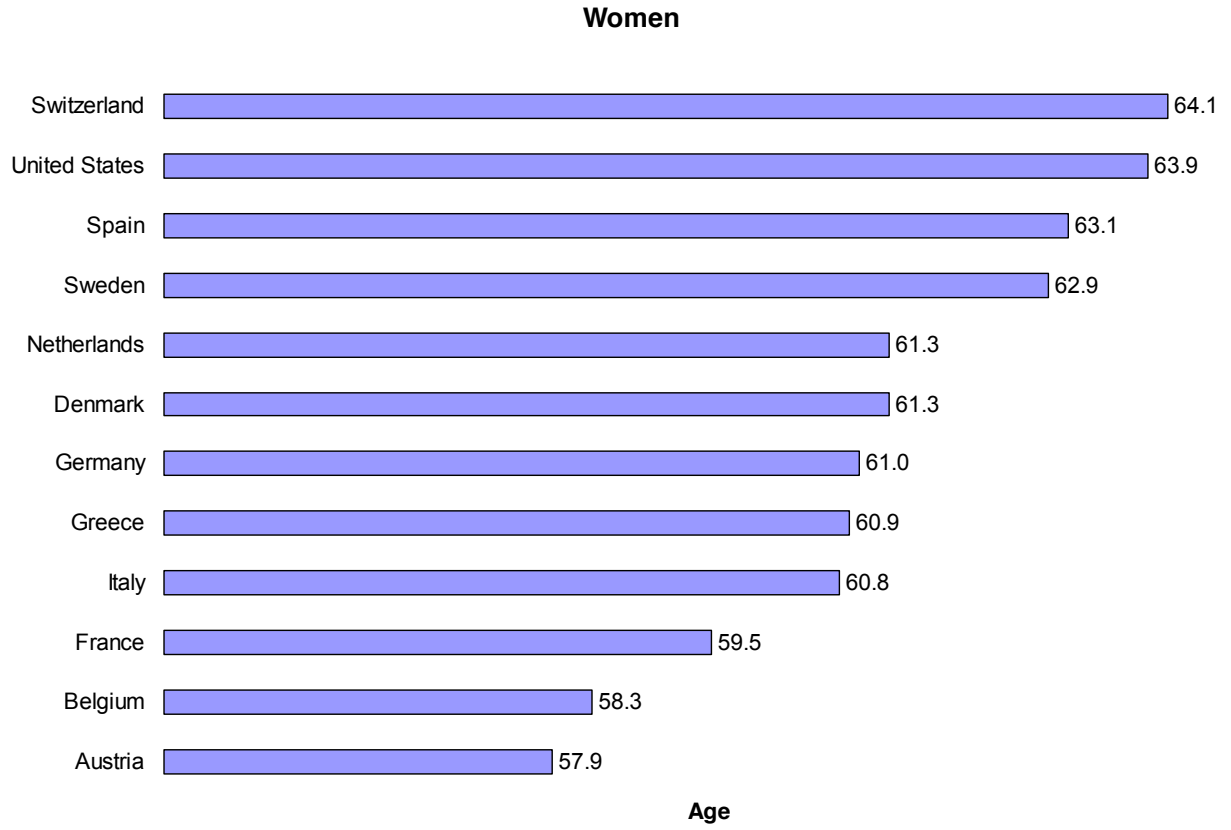
The countries that rank lower than seventh of twelve in this domain tend to have the lowest average effective age of retirement (Figures 11 and 12). Some countries plan to raise their official retirement ages, which could have implications for the work patterns of older adults and thus their levels of social participation. For example, France and Spain have announced plans to raise their official retirement ages by 2 years.

Figure 11. Average effective age of retirement for men



Source: Society at a Glance 2009: OECD Social Indicators

Figure 12. Average effective age of retirement for women



Source: Society at a Glance 2009: OECD Social Indicators

The official retirement age varies little among countries, with Greece and France being the only countries with an official age below 65 for men, ages 58 and 60, respectively. The United States is the only country with an official retirement age for men above age 65. Women are generally eligible for full retirement benefits at the same age as men in all but four countries (Austria, Belgium, Italy, and Switzerland). In these countries, they are entitled to retire one to five years earlier. In contrast, the average age when individuals actually stop working varies substantially even among countries with the same official retirement age. Figures 11 and 12 present the average effective age of retirement for men and women in the study countries. In most countries, the average effective age of retirement is lower than the official retirement age, in some cases by as many as six years. In Austria, Belgium and France, on average, adults leave the labor force before age 60.

Volunteering and participation in community or religious organizations and social clubs are popular ways in which older adults stay socially engaged, especially after they no longer have major life roles as a worker or parent of minor children. Social participation is influenced by a range of factors including the availability of leisure time and opportunities, health conditions, access to transportation, and social norms. Just 4 percent of Greeks and 12 percent of Italians age 50 or older said they volunteered, compared with 29 percent of Swedes and 34 percent of Dutch in this age group (Erlinghagen and Hank 2005). National differences in volunteerism may be linked to differences in family culture, social environments, and welfare state regimes. In Italy, Spain, and Greece, for example, families are expected to provide the type of support and help that a volunteer organization might supply. Northern countries like Norway, Denmark, and the Netherlands have well-established state welfare systems, and this more organized structure of social services promotes volunteering (Haski-Leventhal 2009; Hank and Erlinghagen 2009). These results underscore the effect that the social, political, and economic structure can have on older citizens' decisions to volunteer (Musick and Wilson 2008).

The high rate of volunteerism in the United States may be in part explained by the high proportion of Americans that hold religious beliefs and the fact that faith-based organizations sponsor a large portion of volunteer efforts in the United States.

Family support

In contrast to social participation, the indicator values for contact with children show generally high levels of contact, 80 percent or more, with children in all the countries. The differences between the highest and lowest levels observed are no more than eleven percentage points in both older age groups. While the percent having contact with children is generally high for the current cohorts of older adults examined in this study, fertility trends could affect the proportion of elderly with living children. Policies related to informal, long-term care provision for the elderly could affect contact with children, either establishing incentives to substitute professional care for family caregiving or facilitating families' efforts to provide emotional support and help with daily tasks and personal care.

While fertility has fluctuated in many countries in the past several decades, it has not been above replacement in any of the project countries since the 1980s. Although research finds that the likelihood of having contact with children is not a simple function of the number of children one has, an increase in the proportion of older adults having only one or no children in the future will make a difference in the availability of emotional support and support with various daily tasks from children. The indicator, contact with children, is likely a better measure of emotional support than of instrumental support.

In Europe, there is high level of contact between older people and their children even when they do not live together. One analysis of the near-term future (Grundy 2008) suggests that older Europeans will be able to draw on support from a spouse or child despite declines in fertility and intergenerational co-residence. Studies have found that marriage is associated with clear health benefits for men. Findings are less clear for women. With respect to the health benefits of living with the children, it is difficult to unravel the complexity of the pathways through which this arises—some may live with children because of poor health. Those living with a spouse are in better health than those living alone but those living alone are in better health than those living with relatives. According to Grundy (2008), these results suggest the need to identify the most effective means of encouraging older people to maintain and develop supportive relationships.

Within the countries included in this analysis, there is a wide variation in the extent to which states provide assistance for adults with personal care limitations. Family care is still necessary in even the most generous welfare states. In the European Union, nearly 50 percent of those caring for older people are their children (Glendinning, Arksey, and Tjadens 2009). People who give up or reduce their hours of paid work because of heavy care responsibilities adversely affect their current and future earnings and careers, though it is not clear whether those providing a substantial number of hours of care gave up work due to their care commitments or whether they took on the care commitments because they were not working. In either case, those who are not able to combine paid work and informal care have a reduced probability of labor force participation when their caregiving duties end. Any period of reduced labor force participation affects pensions and savings, decreasing financial independence in old age. In the United States, family members also provide the majority of long-term care, and caregivers face similar issues.

Attitudes towards the roles and responsibilities of families and levels of professional long-term care services for older and disabled people vary widely across countries (Glendinning, Arksey, and Tjadens 2009). As a result, the numbers of informal caregivers and their responsibilities differ from country to country. Fewer resources are likely to be made available for family care where families are assumed to be primarily responsible for the care of older and disabled people. Country differences in the prevalence of informal care also likely reflects differences in employment patterns (such as the availability of part-time work and women's labor force participation), the extent of co-residence of elderly and their children, and cultural norms.

Different mechanisms may be used to provide publicly funded financial support for informal caregivers. And each mechanism is likely to have different implications for both the caregivers' ability to undertake other paid work while providing care and their ability to access formal services that substitute for family care. In some countries, such as Austria and Germany, the person needing care receives a care allowance or benefit and

may then pay an informal caregiver. In the Netherlands, disabled and older people can receive a cash benefit rather than services in kind, and caregivers receive token financial compensation in recognition of their role. Many use the cash benefit to hire informal caregivers or an informal care agency. In some Scandinavian countries caregivers may be employed by the municipality to replace formal home help services.

In the United States, there is increasing recognition that many Americans care for elderly relatives for free, at times even putting themselves at financial risk. Unfortunately, little relief exists in current programs and relief proposed in federal legislation in recent years has had little traction in the federal legislature. With respect to existing programs, at the federal level, the Family Medical Leave Act (FMLA) and Medicare provide some short-term benefits. The Family Medical Leave Act ensures that people working for companies with at least 50 employees may take 12 weeks off to care for an ill relative, though they may not necessarily be paid during this period. Medicare may authorize assistance with personal care in conjunction with treatment of conditions that qualify an individual for home nursing care or physical therapy. Medicare also pays for hospice services, which often includes access to short-term relief (varying from hours to a weekend) for those caring for terminally ill relatives. For low-income elderly, the Medicaid program also provides some in-home care. Proposed legislation in the United States to provide a tax credit to caregivers and another to credit caregivers in calculation of social security (public pension) benefits would reduce the financial risk for some potential caregivers.

VI. Emotional Well-Being

Emotional health among older adults may be affected by both physical health and the availability of social support. Indicators in this domain include:

- Percent with no report of depression (non-clinical)
- Suicide rate for older adults (reverse coded)
- Percent thriving (satisfied with current life and future prospects)

Depression is measured with a non-clinical indicator based on whether or not respondents said they felt depressed much of the time over the week prior to the interview. Using a self-reported non-clinical indicator of depression is more appropriate for the elderly because clinical diagnostic tools generally do not take into account common causes of late-life depression, such as bereavement and coping with multiple chronic conditions. Only one to four percent of the elderly population in the United States has major clinical depression as signaled by at least five of the following symptoms: "depressed mood, diminished interest, loss of pleasure in all or almost all activities, weight loss or gain (more than 5% of bodyweight), insomnia or hypersomnia, psychomotor agitation or retardation, fatigue, feelings of worthlessness or inappropriate guilt, reduced ability to concentrate, and recurrent thoughts of death or suicide" (Alexopoulos 2005). After age 70, the prevalence of major depression doubles. Minor clinical depression is more common among older adults than major clinical depression, but the elderly are still slightly less likely than middle-aged adults to exhibit symptoms of minor clinical depression. In the United States, experimental evidence also suggests that compared to middle aged adults, older adults pay more attention to positive information and express more positive sentiments (Carstensen et al. 2010; Carstensen, Mikels, and Mather 2006).

Suicide is more common among elderly individuals in the United States than in the general population. Suicide is commonly used as a measure of serious mental health problems because most suicide cases meet the criteria for a mental disorder (Harris and Barraclough 1997; Arsenault-Lapierre, Kim and Turecki 2004). Older people are the group with the highest suicide rates in Europe (Jané-Llopis and Gabilondo 2008). Globally, the elderly have also historically accounted for the largest proportion of suicides (Pearson and Conwell 1996). Depression, chronic and painful illnesses and social isolation are specific risk factors for suicide in this age group (O'Connell et al. 2004). A sense of uselessness, financial hardship, and multiple losses of loved ones have also been identified as reasons for increases in suicide rates with age (Kennedy 1996; Stillion and McDowell 1996).

The cultural and political context for suicides differs across countries and this may affect reporting. Access to the lethal methods of suicide, including firearms, affects the success rate among suicide attempts (Brent and Bridge 2003). In countries with substantial percentages of Catholics, suicide may be more underreported than in other countries. Andriessen's (2006) review of studies on the misclassification of suicides concludes that suicide data in Europe seem to be reliable and that international comparisons may be made over time. Comparisons between suicide rates in United States and Europe may be less reliable. As a proxy for psychological, physical, and social distress in old age, completed suicides likely represent only the tip of the iceberg.

Happiness has been measured both in terms of global satisfaction with one's life and based on affective happiness (responses to daily events as positive or negative). Both global and affective happiness start increasing around age fifty, after declining throughout adult life and bottoming out between forty and fifty, (Stone et al. 2010; Blanchflower and Oswald 2008). The SCL/PRB Index uses the indicator on life satisfaction, or whether one is thriving, from the Gallup World Poll to measure happiness (see http://www.gallup.com/poll/122453/Understanding-Gallup-Uses-Cantril-Scale.aspx). Respondents classified as thriving based on Gallup World Poll data have positive views of their present life situation and of the next five years. According to Gallup analyses, these respondents also report fewer health problems and greater enjoyment and interest in activities.

Table 4 Emotional well-being scores and rank, by age group and country

Country	65-74		75+	
	SCORE (0 to 100)	RANK	SCORE (0 to 100)	RANK
Austria	54	7	51	8
Belgium	52	8	55	5
Denmark	68	3	65	3
France	51	9	47	9
Germany	43	12	44	12
Greece	75	1	70	2
Italy	49	10	47	9
Netherlands	65	4	59	4
Spain	48	11	46	11
Sweden	56	6	53	6
Switzerland	59	5	52	7
United States	75	1	73	1

Overall emotional well-being

Emotional well-being varies widely across the study countries. No country had a consistently high score across all indicators. The United States is ranked at the top in both age groups. The standings of countries in this domain differ from what might be expected given the standings in other domains. Greece typically ranked among the lowest scoring countries in other domains, does very well in this domain: it is ranked first or second in the two age groups above in Table 4. In contrast, Germany, typically ranked somewhere in the middle for other domains, is consistently ranked at the bottom in this domain. One of the reasons Greece ranks as highly as it does in the overall well-being measured by the SCL/PRB Index is because of its performance in the emotional well-being domain.

The underlying individual indicators in this domain show that the United States does so well in emotional well-being because it has the lowest percent of the elderly who reported feeling depressed and does relatively well (among the top four) with a low suicide rate and a high percent thriving in both age groups. Greece's high domain ranking is explained by its low suicide rates in both age groups. By contrast, Greece does poorly on the percent thriving, where it is ranked among the bottom four countries in both age groups. Switzerland has surprisingly high suicides rates and its scores on this indicator rank among the bottom (eleventh and twelfth) in the two age groups.

In this domain, results for the underlying indicators that measure non-clinical depression follow closely on SHARE findings using clinical depression measures (Ploubidis and Grundy 2009; Castro-Costa et al. 2007). Among the European countries, the lowest reported non-clinical levels of depression for the oldest cohorts are found in Austria, Denmark, and Sweden and the highest reported levels are in France, Italy, and Spain. Similarly, results for the thriving (life satisfaction) indicator are consistent with findings from past Gallup World Polls. In particular, the high life satisfaction among Denmark's older adults is similar to overall results for all adults in Denmark.

The relative standing of countries in the emotional well-being domain for older adults substantially corresponds to the rankings observed for the 50-64 age group. Countries with high scores for this age group are also likely to have high scores in the older age groups (see Tables 1.2, 2.2, and 3.2 in Appendix B). Greece and the United States are the top two countries in all three age groups. This result is consistent with

international analysis that has shown no decline in happiness after early middle age (Blanchflower and Oswald 2008).

Sensitivity analyses

The United States' average rankings still place it at the top for both the 65-74 and 75+ age groups. Results for the United States relative to other countries in the emotional well-being domain may partly stem from cultural differences in the propensity to report depression and suicides. If the depression and suicide indicators were excluded from this domain, the United States would rank near the top in this domain, third or second rather than first in the 65-74 and 75+ age groups, respectively. Results for overall well-being would also change little. The United States would still rank first in the 75+ age group. It would move from first to second in the 65-74 age group, and Switzerland would hold the top spot.

Mental health policy context and interventions

In a published statement on European mental health policy issues, the Federation of the European Academies of Medicine (FEAM 2010) considered the burden of mental illness in the European Union to be high and neglected. The statement noted new challenges in the treatment of mental illness, one of which is the progressively aging population. Not only will an aging population potentially increase the incidence of mental disease and disorders, discrimination in access to specialized treatment and increased risk of drug interactions may also hamper treatment of older patients. FEAM calls for increased investment into research into biological mechanisms affecting mental health, translation of research results into practice, and sharing information on best practices.

Population aging in the United States raises similar concerns and priorities as it does in Europe with respect to the prevention and treatment of mental disorders in older adults (Bartels et al. 2005), with the current system of health insurance for those ages 65 or older further complicating these issues. Medicare has historically required that patients pay a higher proportion of the cost for psychologically-based services than for medical visits (50 percent vs. 20 percent). In addition, while older adults prefer to receive assessments and treatment at home or where they receive other non-clinic services, Medicare reimbursement policies emphasize clinic-based services.

Social support networks, promotion of physical activity, and participation in community and volunteering programs have been found to improve mental well-being in older populations (Jané-Llopis and Gabilondo 2008). In Germany, a federal demonstration project funds multigenerational homes or centers. These centers locate services such as children's day care, geriatric care, cafes, and elderly apartments in one building space. The proximity of these services not only provides volunteer and work opportunities for the elderly but also encourages social interaction and learning across age cohorts. The Fit for 100 program in Germany instituted a specific set of exercises for people 80 and older in different settings such as nursing homes, adult day care, and senior centers. The result was improved mental and physical fitness among participants who followed the exercise regime for at least one month. The United Kingdom also initiated a fitness scheme, Walking the way to Health Initiative (WHI), shown to improve scores on emotional function tests. The success of these programs suggests that improving emotional well-being may be tackled both by fostering opportunities for interaction and promoting physical activity and providing examples that may be adapted to settings in other countries.

VII. Summary and Conclusion

SCL/PRB Index

The SCL/PRB Index aids in assessing the overall well-being of older population groups of one country relative to others and in ascertaining which factors contribute to a country's relative standing. The Index summarizes 12 key indicators of well-being in old age across four domains—material, physical, social, and emotional well-being. The Index scores, domain scores, and indicator scores all show the performance of each country relative to the best practice observed among this group of 12 countries, 11 European countries and the United States.

The scoring system used for the SCL/PRB Index ranges from zero to 100. For any indicator, the best observed value among the countries receives a score of 100. Domain scores are an average of indicator scores within that domain. The Index (composite) score is an average of the domain scores. In comparison to scores resulting from other index methodologies, benchmarking against the best practice produces results that are relatively easy to understand. To receive a score of 100 for the SCL/PRB Index, a country must have the best value on all 12 indicators. Although the U.S. score of 88 for the 65-74 age group puts it at the top among these countries, it is still 88 of a possible 100.

The SCL/PRB Index ranks the United States at the top for both 65-74 and 75+ age groups. Looking across four domains for adults ages 65-74, the United States consistently performs better than the 11 other countries in the social well-being domain. In the emotional well-being domain, the United States ties with Greece for the highest score for the 65-74 cohort. These results push the United States to the top ranking in overall well-being for the 65-74 age group, despite its ranking in the physical well-being domain where the United States had its worst ranking in any of the domains. The narrow range of scores in the physical well-being domain meant that a poor ranking in this domain had little effect on the Index results.

For the 75+ age group, the United States also ranked one of twelve in overall well-being, largely on the basis of its performance in the social and emotional well-being domains. For this age group, the United States had a better overall performance in the physical well-being domain than it did for the 65-74 age group. In general, the U.S. 75+ cohort benefited from having lower obesity rates than the 65-74 cohort.

In the material and physical domains where the United States was not the highest scoring country, Switzerland scored highest for both the 65-74 and the 75+ cohorts. Relative to Switzerland, median household income in the United States declines more rapidly from the 50-64 cohort to the 75+ cohort. In the United States, social security income helps keep absolute poverty rates relatively low, but pension income makes the elderly among the best off financially in Switzerland (Notten and de Neubourg 2007). Based on data used in this analysis disability rates are much higher for the 50-64 cohort in the United States than in Switzerland, but the rates converge for the 75+ cohort. This raises questions about the physical well-being of the U.S. 50-64 cohort when they are 75+, suggesting that attention needs to be given to the health outcomes of the middle-aged if, in twenty years, their well-being is to be as good as the current 75+ cohort is now.

Results demonstrate that countries with similar overall levels of well-being among older adults may have different advantages and face different challenges to improving the well-being of their older populations. For example, the SCL/PRB Index ranks both Denmark and the Netherlands third in overall well-being of the 65-74 population, yet the financial resources of the 65-74 population groups in the Netherlands exceed the resources of this age group in Denmark. This is likely because Denmark's old age pension does not have the strong poverty reduction effect that the pension scheme in the Netherlands has. On the other hand, Denmark's 65-74 age group enjoys a slightly more active engagement in life and a more positive mental outlook. Despite their lowest ranks for overall well-being, Italy and Spain too have lessons to offer other countries. For example, Spain scores well on emotional well-being for persons ages 50-64, and Italy does relatively well in the physical functioning domain.

While the SCL/PRB Index provides the first summary measure of the well-being in older populations that is comparable across countries, there are several limitations that must be considered when using results. First, one disadvantage of the methodology applied to rank countries in the SCL/PRB Index is that it is less robust

when some countries have extreme values for particular indicators (outliers). One alternate method that ranks countries based on the average ranking of indicator scores (as opposed to the average indicator scores used here) is less sensitive to such outliers. Sensitivity analyses performed with this alternate method for the current set of countries suggest that the country ranks obtained with the SCL/PRB Index are robust among this set of countries.

Second, because the Index as presented here describes the well-being of the average older person in respective age groups for each country, it may mask differences among subpopulations within each age group. These include possible differences by gender, race and ethnicity, and regions. For example, the United States in particular has an older population that is racially and ethnically diverse—and likely to become even more so in coming years. This diversity is particularly pronounced in terms of economic activities over the life course and may have a cumulative impact on material well-being and health at older ages. Racial and ethnic differences in many indicators used in construction of our Index make a strong case for comparison of well-being across racial and ethnic groups within the United States. Other countries, such as Belgium and France, also have substantial ethnic minorities with different economic and social trajectories over the life course, making the construction of an index by ethnic group also of potential interest within other countries.

Third, as mentioned earlier, the Index is based primarily on data from surveys conducted between 2004 and 2006 thus does not capture the impact of the global financial crisis that started in 2007 and the subsequent global recession. Given these changes in the global economy, another round of analysis based on surveys conducted between 2007 and 2009 could potentially identify short-term effects of such events on elderly well-being. An approach similar to the one used to construct the SCL/PRB Index may also be used to estimate the progress of individual countries over time, either by benchmarking each country in each year to the best practice observed in a reference year or by benchmarking each country to its own score in a reference year.

Fourth, while the Index is composed of a variety of indicators identified by previous work, it may leave out factors considered important to some fields of study or to specific constituency groups. As discussed earlier, selection of indicators was dictated not only by our analytic framework but also the availability of comparable data for all the study countries. Furthermore, there was a difficult trade-off between the number of indicators and the number of countries to be included. For example, the Index includes no indicator on cognitive health, which many would argue is an important dimension of the well-being among elderly. This is due to the lack of valid, comparable data in the surveys we examined for all the study countries. The challenges encountered in the process of indicator selection reflect the difficulty of cross-national analysis and highlight the need for further efforts to improve measurement for cross-national comparisons.

Finally, the current Index only examines a select set of the Western industrialized countries. The next logical steps to advance the Index include expanding the Index to examine the well-being of older populations in more culturally and socioeconomically diverse set of countries. This would require further data harmonization across countries, including careful attention to the way survey samples are drawn and to generalization of the sample to the entire older population of a country.

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Appendix A – Variable Definitions

For comparability purposes, all variables used in this study are either defined or re-scaled so that higher values indicate being better off on that particular indicator. Data sources for the indicators are the Health and Retirement Study (HRS) for the United States and the Survey of Health, Ageing and Retirement in Europe (SHARE) for the European countries, unless otherwise noted. The authors estimated indicator values using these datasets. Unless otherwise stated, cases with missing data were dropped from the analysis for that indicator. Most variables used to code the twelve indicators have a non-response rate (percent of eligible respondents with missing answers or refusal) of less than five percent, with a few notable exceptions on questions related to imputations and variables requiring valid responses to multiple questions.

1. Material Well-Being Domain

1.1. Household Income Per Capita: Median per capita income of households in which older adults live, in current PPP dollars

Household income consists of the personal income of all household members as well as household-level income, such as income from assets held jointly and lump sums from insurance, pension, and inheritance. The exact components differ across the surveys. We compute the income per capita by dividing the total household income by the size of each household across respondents. We convert household income per capita to PPP dollars using the Penn World Table (Version 6.3), published by the Center for International Comparisons of Production, Income, and Prices at the University of Pennsylvania. For between 50 and 70 percent of respondents in each country, household income was imputed because of partial (bracketed) or missing data for the household. Imputed responses for these questions were included in the data files obtained from the SHARE project and RAND HRS. (For details, see Börsch-Supan and Jürges, Chapter 10 at http://www.share-project.org/t3/share/uploads/tx_sharepublications/SHARE_BOOK_METHODOLOGY_Wave1.pdf and http://www.rand.org/labor/aging/dataprod/fattable/doc/incwlth06f2a.pdf)

1.2. Not in Absolute Poverty: Percent of older adults living at or above the poverty line (local currency equivalent of U.S. poverty line for year being measured)

We define absolute poverty as household income below the poverty threshold for a given household size in a given year, as defined by the U.S. Office of Management and Budget. We use weighted average thresholds for a particular household size and do not consider the age composition of household members. We adjust the poverty thresholds by using PPP conversion factors from the Penn World Table (Version 6.3), published by the Center for International Comparisons of Production, Income, and Prices at the University of Pennsylvania. Because the income data available in the surveys refer to those from the previous year, we apply the thresholds from the year prior to the survey year (i.e., 2004 for SHARE and 2005 for HRS). Household income is a major input in the calculation of this variable, and 50 to 70 percent of respondents in each country have imputed values for this variable. Imputed responses for these questions were included in the data files obtained from the SHARE project and RAND HRS. (For details, see Börsch-Supan and Jürges, Chapter 10 at http://www.share-project.org/t3/share/uploads/tx_sharepublications/SHARE_BOOK_METHODOLOGY_Wave1.pdf and RAND (2006) http://www.rand.org/labor/aging/dataprod/fattable/doc/incwlth06f2a.pdf)

2. Physical Well-Being Domain

2.1. No Disability: Percent of older adults who have no difficulty in performing Activities of Daily Living (ADLs) (i.e., dressing, bathing, eating, getting in/out of bed, using toilet)

We measure disability using levels of difficulty performing a set of basic activities of daily living (ADL) because of a physical, mental, emotional, or memory problem. These are indicative of being able to meet personal

care needs on one's own. We define older adults to have no disability if they report no difficulty performing the five ADLs: dressing, bathing, eating, getting in and out of bed, and using the toilet. The respondents were asked to exclude difficulties expected to last less than three months. These questions did not ask whether the respondents required any assistance (e.g., personal help or a device) in performing the activities. Consequently, individuals considered to have no limitation may include some persons who can perform the selected activities only with some assistance. We excluded individuals who reported that they did not usually perform the particular activity. Item non-response for each question contributing to this indicator was less than five percent.

2.2. Living Independently: Percent of older adults who have no difficulty taking medications.

Whether one has any difficulty taking medications is one among several instrumental activities of daily living (IADL) necessary for individuals to live independently within a community. We measure the ability to live independently by using the question about taking medications, since this was the only IADL measure asked consistently across the surveys in this study. The respondents were asked whether they had any difficulty taking medications because of a physical, mental, emotional, or memory problem, excluding difficulties expected to last less than three months. We excluded individuals who reported that they did not take any medications. Item non-response for the question regarding difficulty taking medications is less than five percent in each survey.

2.3. No Functional Limitations: Percent of older adults who have no limitation in walking for one block/short distance.

While the surveys asked various questions regarding physical functioning, we measure functional ability using a question on whether one had any difficulty walking for a single city/town block because it was asked consistently in most of the surveys used for the study. The surveys asked respondents to exclude difficulties expected to last less than three months. In SHARE, the distance was specified as 100 meters. Item non-response for the question regarding difficulty walking is less than five percent in each survey.

2.4. Old Age Life Expectancy: The average remaining years of life at a given age, assuming that age-specific mortality levels remain constant.

Data are from the national abridged life tables for five-year age groups that are available in the WHO Statistical Information System (WHOSIS), accessible online at http://apps.who.int/whosis/database/life_tables/life_tables.cfm. The tables are available for 1990, 2000, and 2006. We use the 2006 life tables for all countries. We present the life expectancy at ages 50-54 for the 50-64 age group in our analysis. Similarly, we present the life expectancy at ages 65-69 for the 65-74 age group, and that at ages 75-79 for the group age 75 and older. The definition of the life expectancy is the average number of additional years persons in a given five-year age group can expect to live if current mortality levels observed for the ages above this group were to continue for the rest of their lives.

2.5. Not Obese: Percent of older adults with the Body Mass Index (BMI) less than 30.

We assess the prevalence of obesity by using the Body Mass Index (BMI), defined as the weight in kilograms divided by the square of the height in meters (kg/m^2). We classify those with BMI below 30 to be not obese. We use the higher BMI threshold for not being obese rather than the usual definition for adults (BMI under 25) because a slightly higher body mass tends to be protective for older adults, particularly those over 65. Item non-response for the question on BMI is less than five percent in each survey.

3. Social Well-Being Domain

3.1. Socially Connected: Percent of older adults who are either employed or are participating in at least one activity of a social organization in the last year (e.g., formal volunteer work, religious/political organizations).

We define social connectedness as either being employed or being engaged in any formal volunteer work or activities hosted by clubs, organizations or societies in the past year. The list of clubs, organizations, and societies specifically mentioned in the questionnaire differed across surveys. HRS asked about involvement in volunteer work and attendance at religious services, or meetings or programs of groups, clubs, or organizations that a respondent belonged to. SHARE asked whether or not a respondent was involved in volunteer work, clubs, religious, or political organizations in the previous month. Item non-response for the question regarding current employment is less than five percent in both SHARE and HRS. Similarly, non-response for items regarding community, religious, or other activities is less than five percent for each country in SHARE and for the United States in HRS.

3.2. Contact with Children: Percent of older adults who have any contact with at least one child in the last year.

We define older adults who have contact with children to be persons who either live or are in touch with at least one of their children through any mode of contact in the past year—whether in person, over the phone, by email, or through regular mail. We include older respondents with no living children in the denominator for the indicator. In the SHARE survey, one member of each family is asked about the number of children he/she and spouse have, including stepchildren and adopted children, and about contact with up to four of their children in the past year. Item non-response is under five percent for all SHARE countries and for the United States in HRS.

4. Emotional Well-Being Domain

4.1. Not Depressed: Percent of older adults who did not feel depressed in the previous month (not clinically defined).

We measure depression with a non-clinical "yes/no" indicator of the individual's feelings—whether they felt sad or depressed in the past month. HRS asked whether or not a respondent felt depressed much of the time over the week prior to the interview. Item non-response for the question regarding depression is less than five percent in each survey.

4.2. Suicide Rate: Number of deaths from suicides and self-inflicted injuries per 100,000 persons in the corresponding age group (reverse coded).

We calculate this indicator by dividing the number of persons of a given age group who died from suicide or self-inflicted injuries in a given year by the population of the same age group, then multiplying the result by 100,000. We reverse the scaling by multiplying the rate by (-1) so that the higher scores indicates lower risks for suicide. Data are from the *WHO Mortality Tables,* "Table 1: Number of Registered Deaths." This table reports the number of registered deaths by cause, sex, and age. Population and live birth data are also provided and were used to calculate death rates. For each country, we chose the year that most closely corresponded to the survey year of data used in this analysis (i.e., 2006 for HRS and 2004 for SHARE).

4.3. Thriving: Percent of older adults who are thriving, or are satisfied with current life and future prospects.

The Gallup World Poll survey uses the Cantril Self-Anchoring Striving Scale to classify respondents according to whether they are "thriving," "struggling" or "suffering." The survey asks respondents to rate their current life and their life five years from now by indicating where they stand on the rungs of a ladder. The top of the ladder represents the best possible life and the bottom the worst possible life. The rungs of the ladder are numbered from 0 at the bottom to 10 at the top. Respondents classified as thriving have positive views of their present life situation—locating their current life on the seventh rung or higher. They also have positive views of the next five years, placing themselves on the eighth rung or higher. The thriving classification is based on responses to two questions, resulting in a non-response rate of 11 to 40 percent for respondents age 50 and older in each country.

Appendix B – SCL/PRB Index Results Tables

Table 1.1. Indicator Values for SCL/PRB Index, Older Adults Ages 50-64

	Material Well-Being		Physical Well-Being					Social Well-Being		Emotional Well-Being		
Country	Median Income ($PPP)	Not In Absolute Poverty (%)	No Disability (%)	No Difficulty Taking Meds (%)	No Functional Limitations (%)	Old Age Life Expec-tancy (Years)	Not Obese (%)	Socially Connected (%)	Contact With Children (%)	Not Depressed (%)	Suicide Rate per 100,000 (reverse coded)	Thriving (%)
Austria	18,033	85.5	88.3	99.8	96.2	31.9	76.6	66.0	85.9	69.9	-22.9	48.3
Belgium	16,863	86.2	85.7	99.5	95.4	31.5	79.7	65.5	90.1	62.7	-27.0	55.9
Denmark	27,100	96.7	86.9	99.6	96.4	30.5	84.8	82.0	90.5	68.0	-18.8	83.6
France	17,241	84.9	89.4	99.7	97.1	32.9	82.4	69.4	92.5	51.8	-22.3	44.6
Germany	21,406	84.9	90.7	99.6	95.7	31.6	83.8	75.0	81.7	62.4	-17.5	32.5
Greece	9,994	73.9	91.1	99.2	96.4	31.9	79.6	72.7	87.4	71.3	-3.6	27.9
Italy	12,716	81.3	91.3	98.9	95.0	32.9	81.8	52.1	86.5	58.8	-8.7	42.4
Netherlands	20,758	89.4	87.5	99.8	95.5	31.6	84.0	77.1	88.2	67.5	-13.6	56.0
Spain	9,069	69.7	86.5	99.1	93.9	32.7	74.2	61.9	87.4	63.6	-9.4	42.7
Sweden	22,671	96.8	89.7	99.8	97.7	32.4	84.7	84.3	91.6	65.6	-18.8	64.4
Switzerland	29,185	86.1	93.0	99.8	97.4	33.5	85.4	89.5	86.2	60.4	-25.3	59.0
United States	26,900	92.2	88.4	97.8	90.1	31.0	65.3	92.3	90.0	84.0	-13.8	64.4

Table 1.2. Country Scores for SCL/PRB Index, Domains, and Indicators, Older Adults Ages 50-64

Country	SCL /PRB Index	Material Well-Being			Physical Well-Being						Social Well-Being			Emotional Well-Being			
			Indicator			Indicator						Indicator			Indicator		
		Domain	Median Income	Not In Absolute Poverty	Domain	No Disabi-lity	No Difficulty Taking Meds	No Functio-nal Limita-tions	Old Age Life Expec-tancy	Not Obese	Domain	Socially Connec-ted	Contact With Children	Domain	Not Depre-ssed	Suicide Rate per 100,000 (reverse coded)	Thriving
Austria	**76**	**75**	62	88	**96**	95	100	98	95	90	**82**	72	93	**52**	83	16	58
Belgium	**76**	**73**	58	89	**95**	92	100	98	94	93	**84**	71	97	**52**	75	13	67
Denmark	**88**	**96**	93	100	**96**	93	100	99	91	99	**93**	89	98	**67**	81	19	100
France	**76**	**73**	59	88	**98**	96	100	99	98	96	**88**	75	100	**44**	62	16	53
Germany	**77**	**81**	73	88	**98**	98	100	98	94	98	**85**	81	88	**45**	74	21	39
Greece	**78**	**55**	34	76	**97**	98	99	99	95	93	**87**	79	94	**73**	85	100	33
Italy	**73**	**64**	44	84	**98**	98	99	97	98	96	**75**	56	94	**54**	70	41	51
Netherlands	**82**	**82**	71	92	**97**	94	100	98	94	98	**89**	84	95	**58**	80	26	67
Spain	**71**	**52**	31	72	**95**	93	99	96	98	87	**81**	67	94	**55**	76	38	51
Sweden	**85**	**89**	78	100	**98**	96	100	100	97	99	**95**	91	99	**58**	78	19	77
Switzerland	**85**	**94**	100	89	**100**	100	100	100	100	100	**95**	97	93	**52**	72	14	71
United States	**88**	**94**	92	95	**91**	95	98	92	93	76	**99**	100	97	**68**	100	26	77

Note: scores are rounded to the nearest whole number when creating the domain scores and again when creating the overall Index.

Table 1.3. Country Rankings for SCL/PRB Index, Domains, and Indicators, Older Adults Ages 50-64

Country	SCL /PRB Index	Material Well-Being			Physical Well-Being						Social Well-Being			Emotional Well-Being			
		Domain	Indicator		Domain	Indicator					Domain	Indicator		Domain	Indicator		
			Median Income	Not In Absolute Poverty		No Disabi-lity	No Difficulty Taking Meds	No Functio-nal Limita-tions	Old Age Life Expec-tancy	Not Obese		Socially Connec-ted	Contact With Children		Not Depre-ssed	Suicide Rate per 100,000 (reverse coded)	Thriving
Austria	**8**	**7**	7	7	**8**	7	1	6	6	10	**10**	9	10	**8**	3	9	7
Belgium	**8**	**8**	9	5	**10**	12	1	6	8	8	**9**	10	4	**8**	8	12	5
Denmark	**1**	**1**	2	1	**8**	10	1	3	12	2	**4**	4	3	**3**	4	7	1
France	**8**	**8**	8	7	**2**	5	1	3	2	6	**6**	8	1	**12**	12	9	8
Germany	**7**	**6**	5	7	**2**	2	1	6	8	5	**8**	6	12	**11**	9	6	11
Greece	**6**	**11**	11	11	**6**	2	9	3	6	9	**7**	7	7	**1**	2	1	12
Italy	**11**	**10**	10	10	**2**	2	9	10	2	7	**12**	12	7	**7**	11	2	9
Netherlands	**5**	**5**	6	4	**6**	9	1	6	8	4	**5**	5	6	**4**	5	4	5
Spain	**12**	**12**	12	12	**10**	10	9	11	2	11	**11**	11	7	**6**	7	3	9
Sweden	**3**	**4**	4	1	**2**	5	1	1	5	3	**2**	3	2	**4**	6	7	2
Switzerland	**3**	**2**	1	5	**1**	1	1	1	1	1	**2**	2	10	**8**	10	11	4
United States	**1**	**2**	3	3	**12**	7	12	12	11	12	**1**	1	4	**2**	1	4	2

Table 2.1. Indicator Values for SCL/PRB Index, Older Adults Ages 65-74

	Material Well-Being		Physical Well-Being					Social Well-Being		Emotional Well-Being		
Country	Median Income ($PPP)	Not In Absolute Poverty (%)	No Disability (%)	No Difficulty Taking Meds (%)	No Functional Limitations (%)	Old Age Life Expec-tancy (Years)	Not Obese (%)	Socially Connected (%)	Contact With Children (%)	Not Depressed (%)	Suicide Rate per 100,000 (reverse coded)	Thriving (%)
Austria	20,304	93.0	80.5	99.2	93.4	19.2	80.4	39.5	86.0	70.2	-30.3	46.4
Belgium	15,372	91.6	77.5	99.5	91.0	18.9	80.6	39.2	88.7	65.9	-23.4	41.8
Denmark	16,196	96.1	81.5	98.5	92.4	18.0	82.7	57.1	90.0	70.2	-20.8	72.9
France	18,367	91.4	80.2	98.9	90.6	20.5	83.2	34.0	89.5	55.7	-23.3	49.2
Germany	18,521	92.2	82.6	98.4	90.2	18.9	78.9	41.6	85.3	62.6	-18.6	22.8
Greece	10,308	72.5	75.4	98.0	89.4	18.9	80.1	56.8	89.6	66.3	-4.9	34.4
Italy	12,741	78.6	81.3	98.3	86.2	19.8	80.8	20.9	85.7	55.6	-10.7	27.5
Netherlands	22,782	95.2	81.2	99.3	90.3	18.7	82.6	47.2	88.8	66.1	-8.2	42.9
Spain	9,518	69.8	74.1	98.3	87.5	19.8	71.9	24.1	88.2	57.6	-13.1	29.2
Sweden	21,291	96.6	82.9	99.4	95.2	19.3	84.1	49.5	89.7	67.5	-18.1	46.7
Switzerland	27,499	95.0	88.6	100.0	96.5	20.4	86.1	61.2	87.4	63.4	-26.6	62.5
United States	20,490	92.8	86.8	97.8	87.1	18.8	69.3	85.5	93.4	86.4	-12.5	62.1

Table 2.2. Country Scores for SCL/PRB Index, Domains, and Indicators, Older Adults Ages 65-74

Country	SCL /PRB Index	Material Well-Being			Physical Well-Being						Social Well-Being			Emotional Well-Being			
			Indicator			Indicator						Indicator			Indicator		
		Domain	Median Income	Not In Absolute Poverty	Domain	No Disabi-lity	No Difficulty Taking Meds	No Functio-nal Limita-tions	Old Age Life Expec-tancy	Not Obese	Domain	Socially Connec-ted	Contact With Children	Domain	Not Depre-ssed	Suicide Rate per 100,000 (reverse coded)	Thriving
Austria	**76**	**85**	74	96	**95**	91	99	97	94	93	**69**	46	92	**54**	81	16	64
Belgium	**73**	**75**	56	95	**93**	87	100	94	92	94	**70**	46	95	**52**	76	21	57
Denmark	**81**	**79**	59	99	**94**	92	99	96	88	96	**82**	67	96	**68**	81	24	100
France	**74**	**81**	67	95	**96**	91	99	94	100	97	**68**	40	96	**51**	64	21	67
Germany	**72**	**81**	67	95	**94**	93	98	93	92	92	**70**	49	91	**43**	72	26	31
Greece	**76**	**56**	37	75	**92**	85	98	93	92	93	**81**	66	96	**75**	77	100	47
Italy	**66**	**64**	46	81	**94**	92	98	89	97	94	**58**	24	92	**49**	64	46	38
Netherlands	**81**	**91**	83	99	**94**	92	99	94	91	96	**75**	55	95	**65**	77	60	59
Spain	**63**	**53**	35	72	**91**	84	98	91	97	84	**61**	28	94	**48**	67	37	40
Sweden	**80**	**89**	77	100	**97**	94	99	99	94	98	**77**	58	96	**56**	78	27	64
Switzerland	**85**	**99**	100	98	**100**	100	100	100	100	100	**83**	72	94	**59**	73	18	86
United States	**88**	**85**	75	96	**92**	98	98	90	92	80	**100**	100	100	**75**	100	39	85

Note: scores are rounded to the nearest whole number when creating the domain scores and again when creating the overall Index.

Table 2.3. Country Rankings for SCL/PRB Index, Domains, and Indicators, Older Adults Ages 65-74

Country	SCL /PRB Index	Material Well-Being			Physical Well-Being						Social Well-Being			Emotional Well-Being			
			Indicator			Indicator						Indicator			Indicator		
		Domain	Median Income	Not In Absolute Poverty	Domain	No Disabi-lity	No Difficulty Taking Meds	No Functio-nal Limita-tions	Old Age Life Expec-tancy	Not Obese	Domain	Socially Connec-ted	Contact With Children	Domain	Not Depre-ssed	Suicide Rate per 100,000 (reverse coded)	Thriving
Austria	**6**	**4**	5	5	**4**	8	3	3	5	8	**9**	8	10	**7**	2	12	5
Belgium	**9**	**9**	9	7	**9**	10	1	5	7	7	**7**	8	6	**8**	7	9	8
Denmark	**3**	**8**	8	2	**5**	5	3	4	12	4	**3**	3	2	**3**	2	8	1
France	**8**	**6**	6	7	**3**	8	3	5	1	3	**10**	10	2	**9**	11	9	4
Germany	**10**	**6**	6	7	**5**	4	8	8	7	10	**7**	7	12	**12**	9	7	12
Greece	**6**	**11**	11	11	**10**	11	8	8	7	9	**4**	4	2	**1**	5	1	9
Italy	**11**	**10**	10	10	**5**	5	8	12	3	6	**12**	12	10	**10**	11	3	11
Netherlands	**3**	**2**	2	2	**5**	5	3	5	11	5	**6**	6	6	**4**	5	2	7
Spain	**12**	**12**	12	12	**12**	12	8	10	3	11	**11**	11	8	**11**	10	5	10
Sweden	**5**	**3**	3	1	**2**	3	3	2	5	2	**5**	5	2	**6**	4	6	5
Switzerland	**2**	**1**	1	4	**1**	1	1	1	1	1	**2**	2	8	**5**	8	11	2
United States	**1**	**4**	4	5	**10**	2	8	11	7	12	**1**	1	1	**1**	1	4	3

Table 3.1. Indicator Values for SCL/PRB Index, Older Adults Ages 75 and over

	Material Well-Being		Physical Well-Being					Social Well-Being		Emotional Well-Being		
Country	Median Income ($PPP)	Not In Absolute Poverty (%)	No Disability (%)	No Difficulty Taking Meds (%)	No Functional Limitations (%)	Old Age Life Expec-tancy (Years)	Not Obese (%)	Socially Connected (%)	Contact With Children (%)	Not Depressed (%)	Suicide Rate per 100,000 (reverse coded)	Thriving (%)
Austria	18,600	92.2	56.9	97.4	81.0	11.8	86.0	27.1	80.5	66.2	-42.2	37.8
Belgium	14,921	88.1	51.5	94.7	72.0	11.6	80.5	27.1	84.7	56.8	-39.7	52.1
Denmark	14,050	91.5	55.7	91.8	77.1	11.2	88.0	35.8	86.6	63.2	-34.3	64.3
France	17,590	87.4	51.6	91.2	70.5	13.0	85.0	25.5	81.6	53.9	-35.0	36.9
Germany	16,170	86.9	57.7	94.5	71.8	11.6	84.3	25.5	85.7	49.1	-29.7	33.4
Greece	8,972	58.5	49.4	92.3	67.2	11.3	82.1	47.5	89.7	53.7	-6.3	28.7
Italy	12,073	70.4	54.7	92.0	69.2	12.3	85.1	10.4	83.8	50.7	-16.1	26.1
Netherlands	21,378	96.8	60.7	94.9	74.5	11.4	86.7	32.2	86.7	62.2	-14.0	36.7
Spain	8,005	54.5	47.6	88.3	65.0	12.2	67.1	19.9	84.8	49.4	-20.4	30.6
Sweden	15,896	90.8	55.4	89.6	79.4	11.9	86.4	30.5	86.5	64.5	-19.1	30.5
Switzerland	22,021	97.5	75.2	97.5	92.6	12.7	85.5	40.1	87.2	54.8	-47.8	48.6
United States	17,464	90.6	74.0	92.5	74.1	11.9	82.0	79.5	91.4	83.1	-16.8	51.6

Table 3.2. Country Scores for SCL/PRB Index, Domains, and Indicators, Older Adults Ages 75 and over

Country	SCL /PRB Index	Material Well-Being			Physical Well-Being						Social Well-Being			Emotional Well-Being			
			Indicator			Indicator						Indicator			Indicator		
		Domain	Median Income	Not In Absolute Poverty	Domain	No Disabi-lity	No Difficulty Taking Meds	No Functio-nal Limita-tions	Old Age Life Expec-tancy	Not Obese	Domain	Socially Connec-ted	Contact With Children	Domain	Not Depre-ssed	Suicide Rate per 100,000 (reverse coded)	Thriving
Austria	**73**	**90**	84	95	**90**	76	100	87	91	98	**61**	34	88	**51**	80	15	59
Belgium	**71**	**79**	68	90	**85**	68	97	78	89	91	**63**	34	93	**55**	68	16	81
Denmark	**75**	**79**	64	94	**87**	74	94	83	86	100	**70**	45	95	**65**	76	18	100
France	**70**	**85**	80	90	**87**	69	94	76	100	97	**61**	32	89	**47**	65	18	57
Germany	**69**	**81**	73	89	**87**	77	97	78	89	96	**63**	32	94	**44**	59	21	52
Greece	**71**	**50**	41	60	**83**	66	95	73	87	93	**79**	60	98	**70**	65	100	45
Italy	**63**	**64**	55	72	**87**	73	94	75	95	97	**52**	13	92	**47**	61	39	41
Netherlands	**79**	**98**	97	99	**89**	81	97	80	88	99	**68**	41	95	**59**	75	45	57
Spain	**58**	**46**	36	56	**79**	63	91	70	94	76	**59**	25	93	**46**	59	31	48
Sweden	**73**	**83**	72	93	**88**	74	92	86	92	98	**67**	38	95	**53**	78	33	47
Switzerland	**81**	**100**	100	100	**99**	100	100	100	98	97	**73**	50	95	**52**	66	13	76
United States	**88**	**86**	79	93	**92**	98	95	80	92	93	**100**	100	100	**73**	100	38	80

Note: scores are rounded to the nearest whole number when creating the domain scores and again when creating the overall Index.

Table 3.3. Country Rankings for SCL/PRB Index, Domains, and Indicators, Older Adults Ages 75 and over

Country	SCL /PRB Index	Material Well-Being			Physical Well-Being						Social Well-Being			Emotional Well-Being			
			Indicator			Indicator						Indicator			Indicator		
		Domain	Median Income	Not In Absolute Poverty	Domain	No Disabi-lity	No Difficulty Taking Meds	No Functio-nal Limita-tions	Old Age Life Expec-tancy	Not Obese	Domain	Socially Connec-ted	Contact With Children	Domain	Not Depre-ssed	Suicide Rate per 100,000 (reverse coded)	Thriving
Austria	**5**	**3**	3	3	**3**	5	1	2	7	4	**9**	7	12	**8**	2	11	5
Belgium	**7**	**8**	8	7	**10**	10	3	7	8	11	**7**	7	8	**5**	6	10	2
Denmark	**4**	**8**	9	4	**5**	6	8	4	12	1	**4**	4	3	**3**	4	8	1
France	**9**	**5**	4	7	**7**	9	8	9	1	7	**9**	9	11	**9**	8	8	6
Germany	**10**	**7**	6	9	**7**	4	3	7	8	8	**7**	9	7	**12**	11	7	8
Greece	**7**	**11**	11	11	**11**	11	6	11	11	9	**2**	2	2	**2**	8	1	11
Italy	**11**	**10**	10	10	**7**	8	8	10	3	6	**12**	12	10	**9**	10	3	12
Netherlands	**3**	**2**	2	2	**4**	3	3	5	10	2	**5**	5	3	**4**	5	2	6
Spain	**12**	**12**	12	12	**12**	12	12	12	4	12	**11**	11	8	**11**	11	6	9
Sweden	**5**	**6**	7	5	**5**	6	11	3	5	3	**6**	6	3	**6**	3	5	10
Switzerland	**2**	**1**	1	1	**1**	1	1	1	2	5	**3**	3	3	**7**	7	12	4
United States	**1**	**4**	5	5	**2**	2	6	5	5	10	**1**	1	1	**1**	1	4	3

Appendix C– Sensitivity Analysis Tables

Table 1. Average Ranking Across Domains, Older Adults Ages 50-64

Country	Average Ranking Across Domains	Average of Indicator Rankings Within Domain			
		Material Well-Being	Physical Well-Being	Social Well-Being	Emotional Well-Being
Austria	7	7	6	10	6
Belgium	7	7	7	7	7
Denmark	4	2	6	4	4
France	6	8	3	5	7
Germany	7	6	4	9	7
Greece	7	11	6	7	5
Italy	8	10	6	10	5
Netherlands	5	5	6	6	4
Spain	9	12	9	9	5
Sweden	3	3	3	3	4
Switzerland	4	3	1	6	6
United States	5	3	11	3	3

Table 2. Average Ranking Across Domains, Older Adults Ages 65-74

Country	Average Ranking Across Domains	Average of Indicator Rankings Within Domain			
		Material Well-Being	Physical Well-Being	Social Well-Being	Emotional Well-Being
Austria	6	5	5	9	6
Belgium	7	8	6	7	8
Denmark	5	5	6	3	4
France	6	7	4	6	8
Germany	8	7	7	10	9
Greece	7	11	9	3	5
Italy	9	10	7	11	8
Netherlands	5	2	6	6	5
Spain	10	12	9	10	8
Sweden	4	2	3	4	5
Switzerland	4	3	1	5	7
United States	4	5	8	1	3

Table 3. Average Ranking Across Domains, Older Adults Age 75 and over

Country	Average Ranking Across Domains	Average of Indicator Rankings Within Domain			
		Material Well-Being	Physical Well-Being	Social Well-Being	Emotional Well-Being
Austria	6	3	4	10	6
Belgium	8	8	8	8	6
Denmark	5	7	6	4	4
France	8	6	7	10	7
Germany	8	8	6	8	9
Greece	8	11	10	2	7
Italy	9	10	7	11	8
Netherlands	4	2	5	4	4
Spain	10	12	10	10	9
Sweden	6	6	6	5	6
Switzerland	4	1	2	3	8
United States	4	5	6	1	3