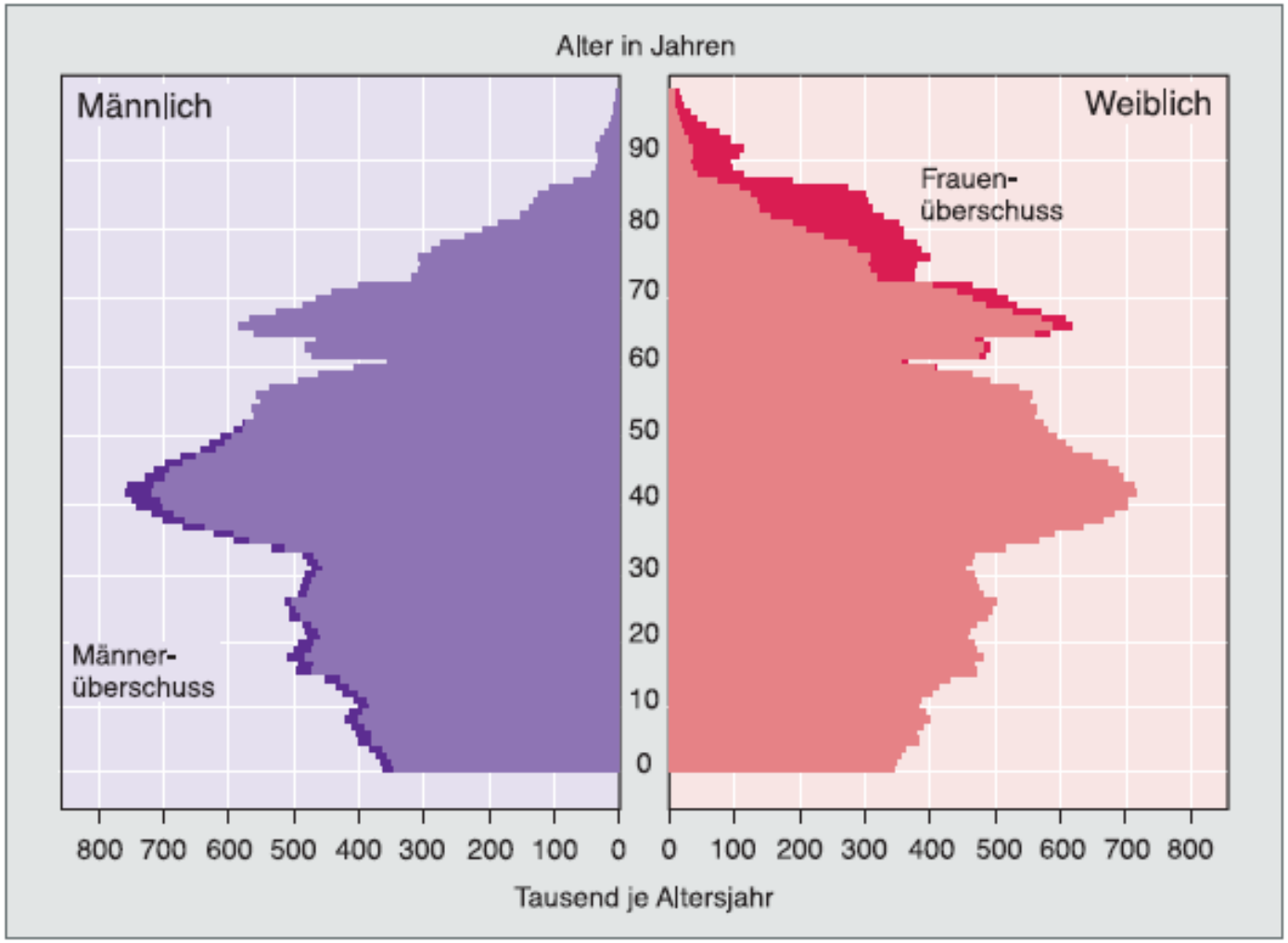
Europe's Coming Demographic Challenge: Unlocking the Value of Health

By Nicholas Eberstadt and Hans Groth

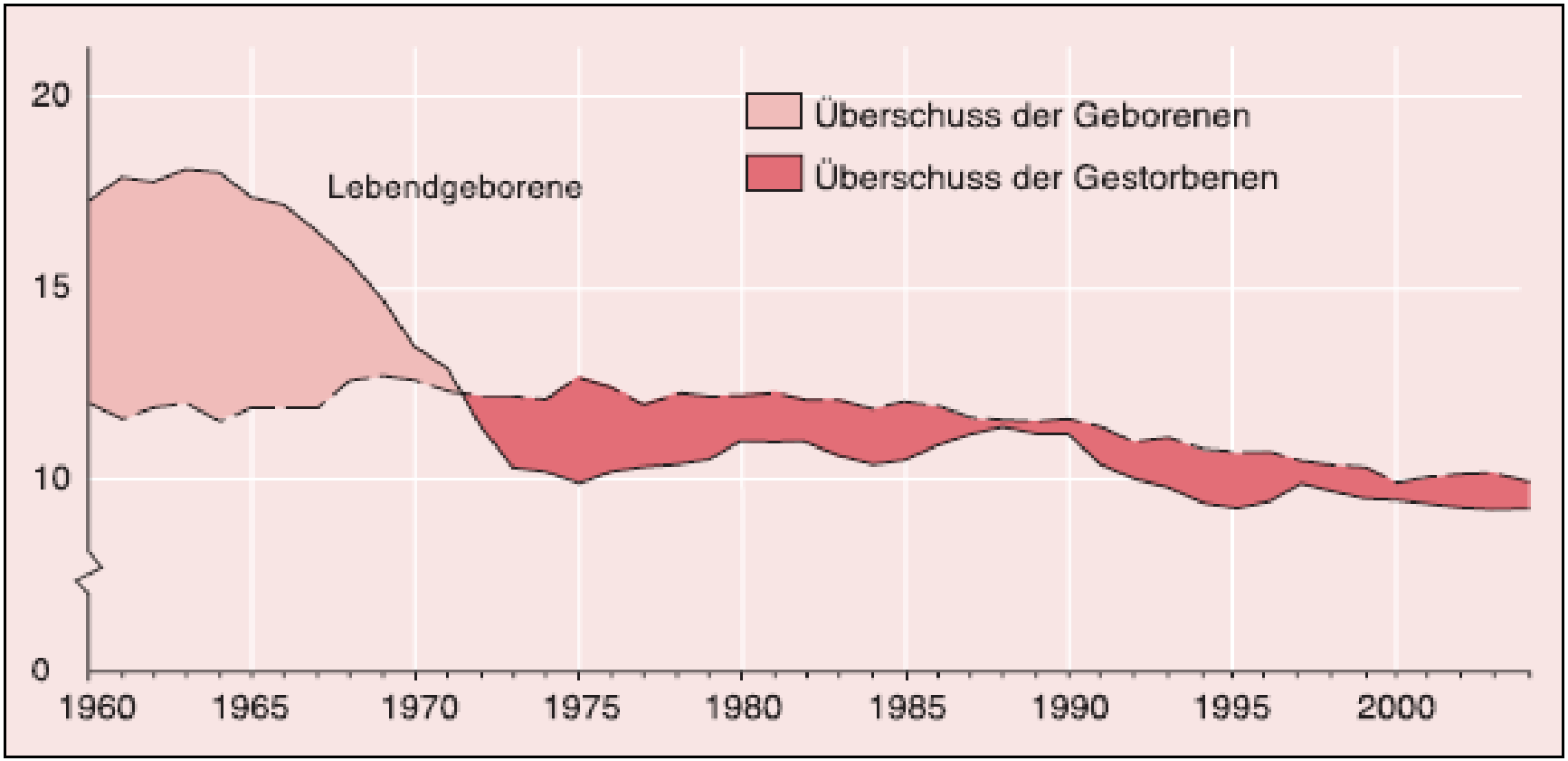
July 2008

Figure 1: Altersaufbau der Bevölkerung Deutschlands am 31. 12. 2004



Source: Statistisches Bundesamt (Hrsg.), “Datenreport 2006: Zahlen und Fakten über die Bundesrepublik Deutschland (Berlin, German: Bundeszentrale für politische Bildung, 2006).

Figure 2: Lebendgeboren und Gestorbene in Deutschland seit 1960 je 1000 Einwohner

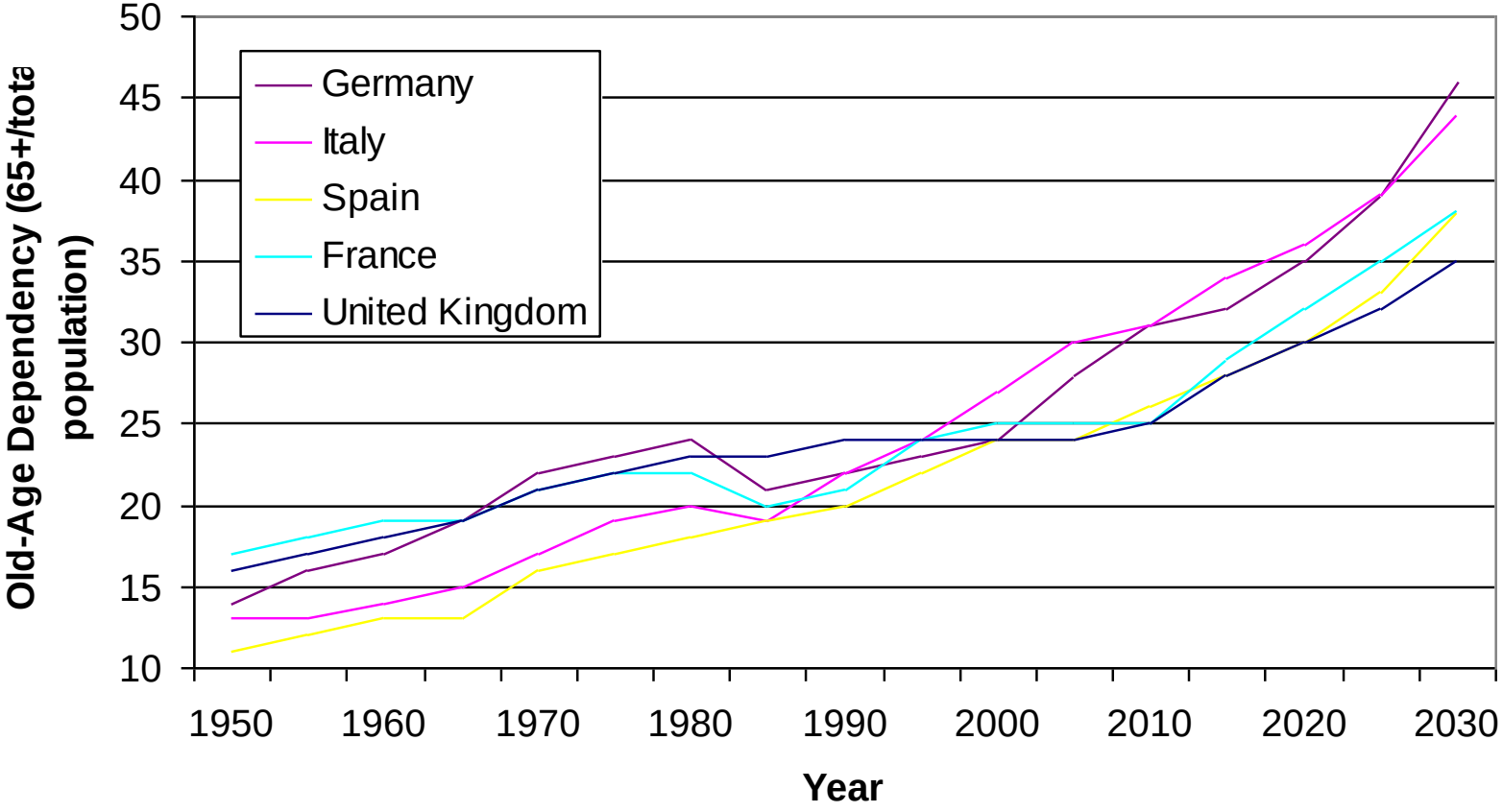


Source: Statistisches Bundesamt (Hrsg.), “Datenreport 2006: Zahlen und Fakten über die Bundesrepublik Deutschland (Berlin, German: Bundeszentrale für politische Bildung, 2006).

Figure 3: Altersaufbau der Bevölkerung in Deutschland 2005, 2030 und 2050 nach unterschiedlichen Annahmen der 11. koordinierten Bevölkerungsvorausberechnung

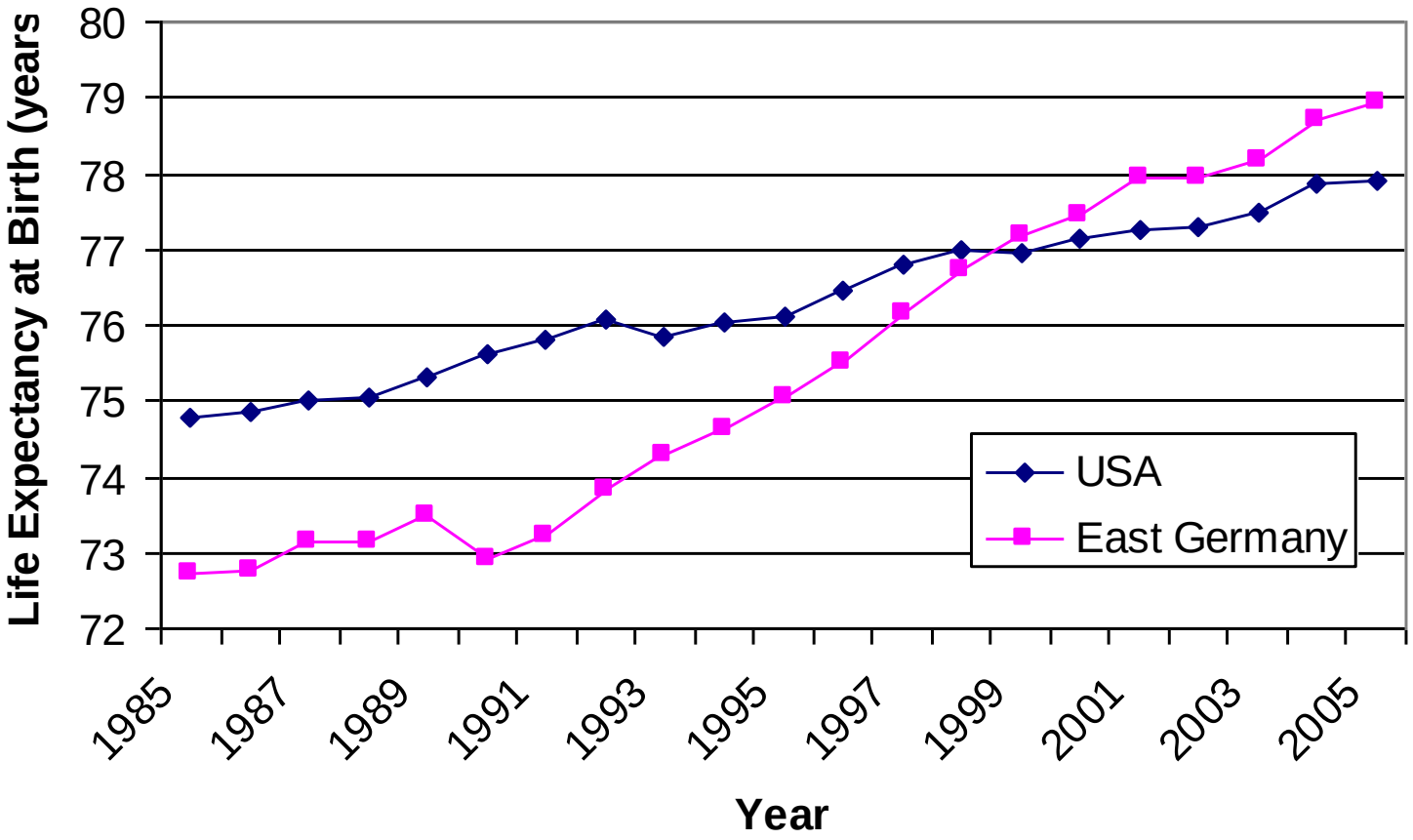
Source: Statistisches Bundesamt, “Bevölkerung Deutschlands bis 2050: koordinierte Bevölkerungsvorausberechnung,” (Wiesbaden, Germany: Statistisches Bundesamt, 2006).

Figure 4: Old-Age Dependency Ratios for Major European Economies: 1950-2030



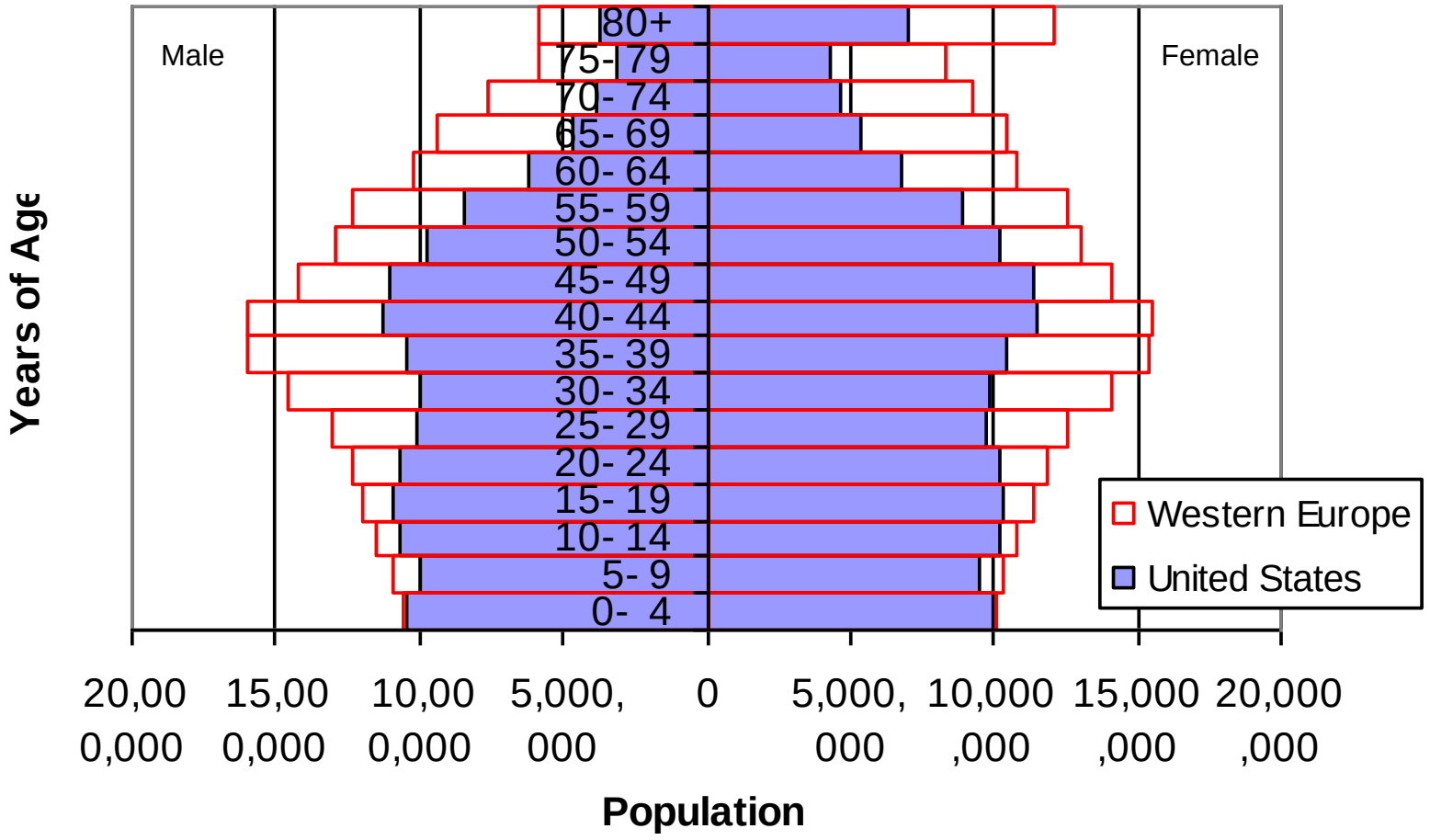
Source: United Nations Population Division, World Population Prospects: The 2006 Revision Population Database, http://esa.un.org/unpp (for medium variant population; accessed July 14, 2008).

Figure 5: Overall Life Expectancy at Birth, United States v. Germany, 1985-2005 (males plus females)



Source: *Human Mortality Database*. University of California, Berkeley (USA), and Max Planck Institute for Demographic Research (Germany). Available at www.mortality.org or www.humanmortality.de (data downloaded on June 24, 2008).

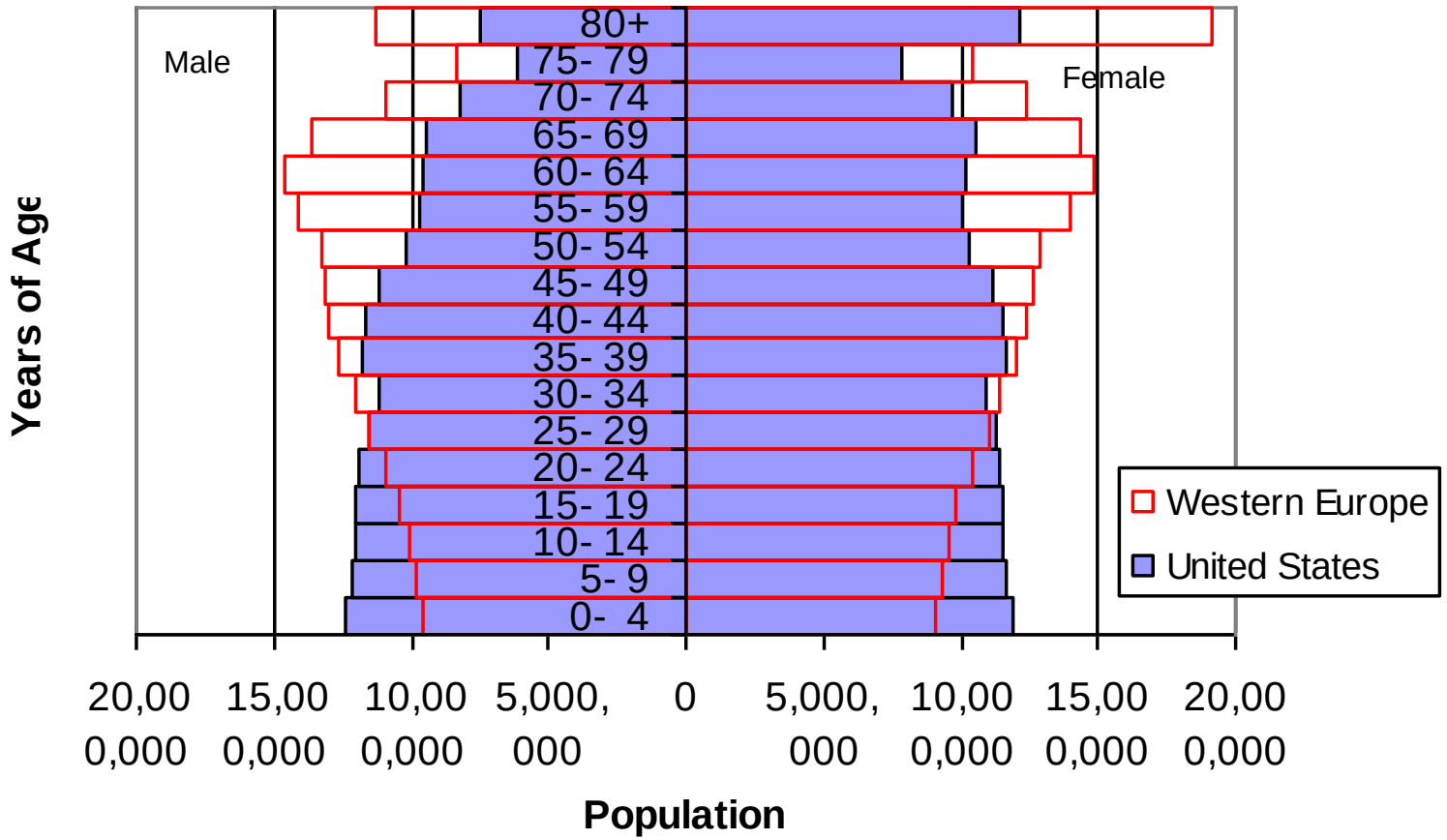
Figure 6
Western Europe vs. U.S. Population Structure, 2005



Note: "Western Europe" defined according to U.S. Census Bureau taxonomy as EU-15, plus Iceland, Norway, and Switzerland.

Source: U.S. Census Bureau, International Data Base, http://www.census.gov/cgi-bin/ipc/idbagg (accessed July 3, 2008).

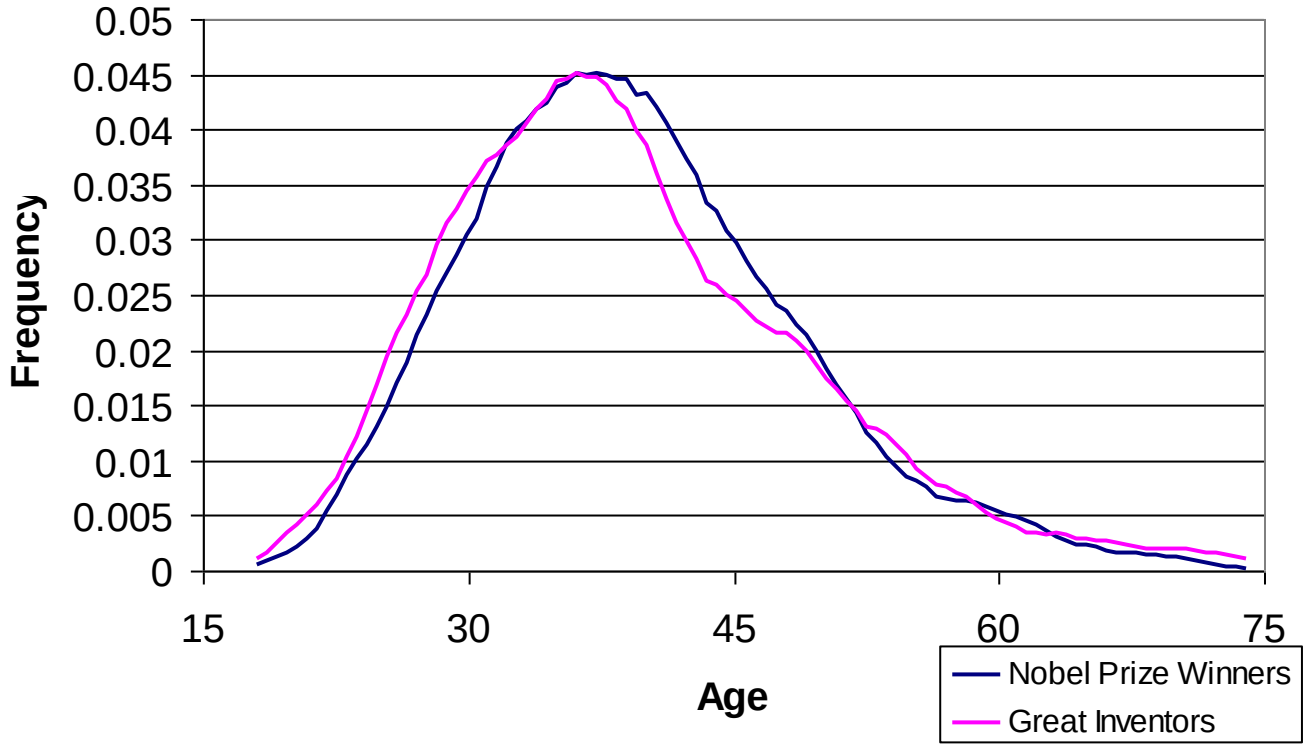
Figure 7
Western Europe vs. U.S. Population Structure, 2030 (projected)



Note: "Western Europe" defined according to U.S. Census Bureau taxonomy as EU-15, plus Iceland, Norway, and Switzerland.

Source: U.S. Census Bureau, International Data Base, http://www.census.gov/cgi-bin/ipc/idbagg (accessed July 3, 2008).

Figure 8
The Age Distribution of Great Innovation



Source: Benjamin F. Jones, "Age and Great Invention" (Working Paper 11359, National Bureau of Economic Research, May 2005), http://www.nber.org/papers/11359 (accessed July 2, 2007).

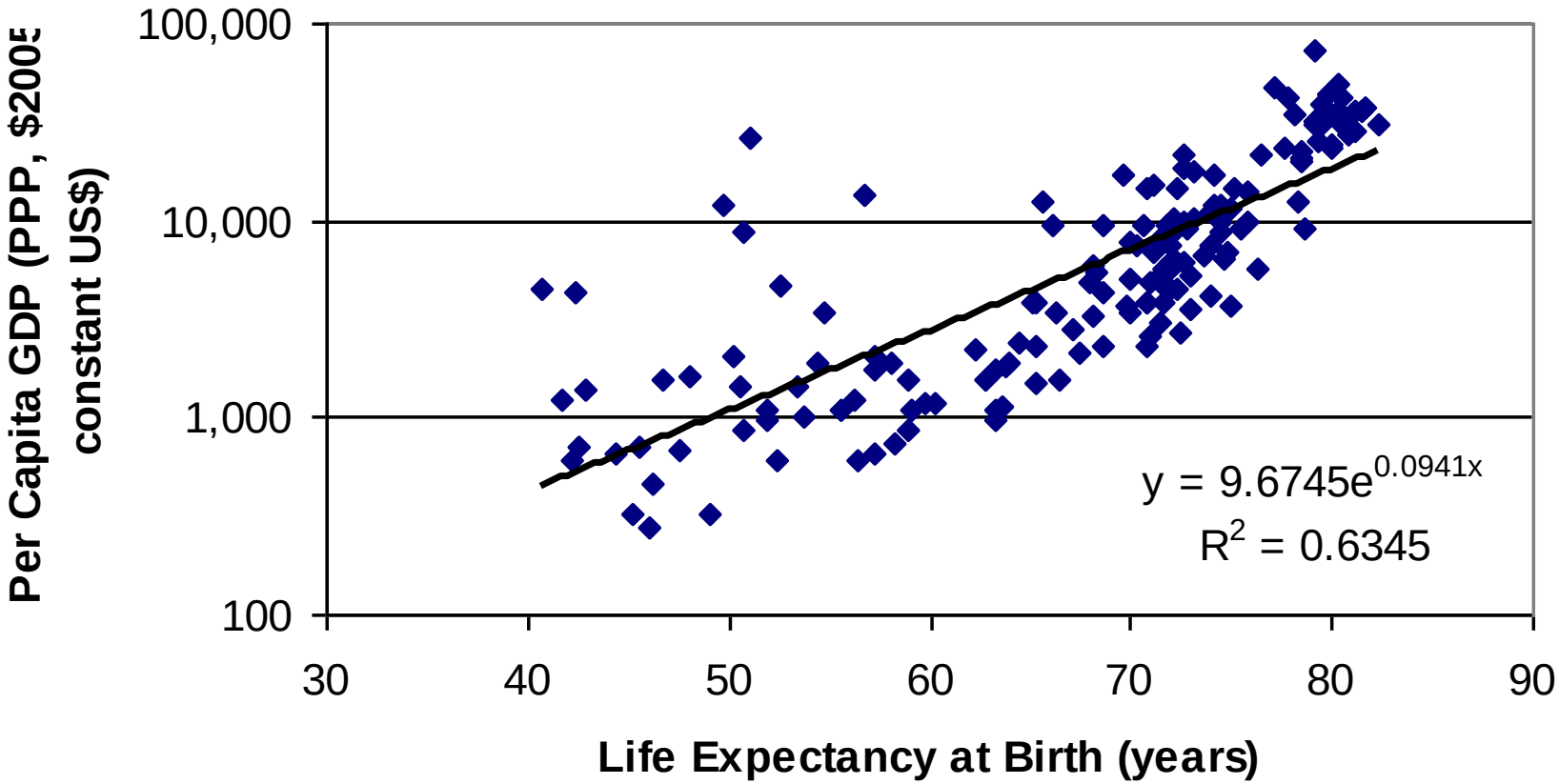
Table 1
Educational Attainment for the Adult Population: Western Europe, the United States, and Western European Residents in the United States, c. 2000

	Educational attainment of population ages 25–64 by country (percent)			Educational attainment of foreign-born ages 25+ living in the U.S. by country of origin (percent)
	Below upper secondary	Upper Secondary and post-secondary	Tertiary	Tertiary
Austria	24.3	61.8	13.9	37.9
Belgium	41.5	31.4	27.1	46.7
Denmark	19.8	53.7	26.5	47.6
Finland	26.2	41.5	32.3	51.8
France	36.1	40.6	23	51.8
Germany	17.4	59.4	23.2	33.7
Greece	48.6	33.6	17.8	23.5
Ireland	42.4	22	35.6	30
Italy	56.7	33.2	10	17
Luxembourg	47.3	34.6	18.1	39.8
Netherlands	45	32	22.2	44.8
Portugal	80.1	10.8	9	10.4
Spain	59.7	16.2	23.6	38.2
Sweden	19.4	49	31.6	51.2
United Kingdom	37.1	36.9	26.1	42
Iceland (2001)	36	39	25	47
Norway (2001)	15	56	29	43.5
Swizerland (2001)	12	62	26	53.8
EU-15	38.9	37.3	23.8	
United States	12.3	50.3	37.3	

Note: Definitions of educational level here are from the International Standard Classification of Education (ISCED-97); for the U.S. educational system, “tertiary education” would include not only graduate study and a bachelor’s degree, but also training for an associate’s degree.

Sources: Andre Sapir et al., *An Agenda for a Growing Europe* (New York: Oxford University Press, 2004), table 4.4; U.S. Census Bureau, "United States Foreign Born Population: Foreign-Born Profiles," http://www.census.gov/population/www/socdemo/foreign/datatbls.html (accessed June 1, 2007); Organisation for Economic Co-operation and Development, *Education At A Glance: OECD Indicators, 2002* (Paris: OECD, 2002), table A3.1a.

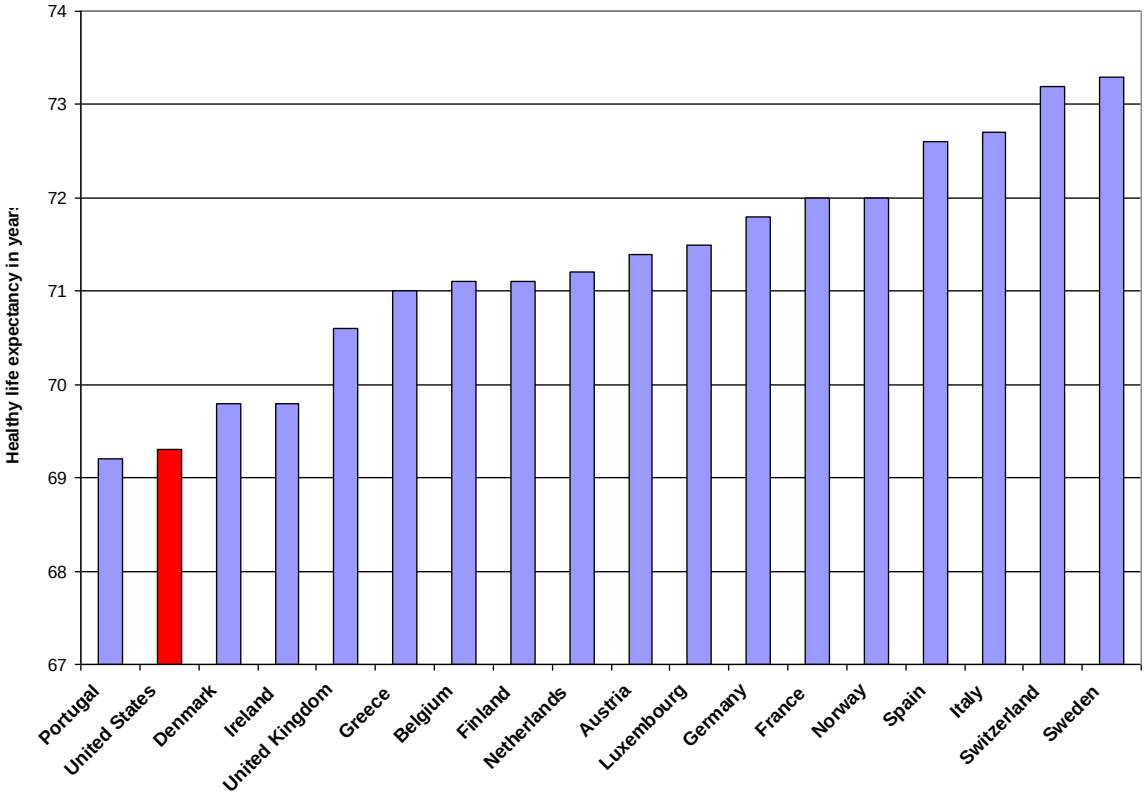
Figure 9
Health Equals Wealth: Life Expectancy vs. Purchasing Power Parity Per Capita GDP



Note: Estimates are for the year 2006.

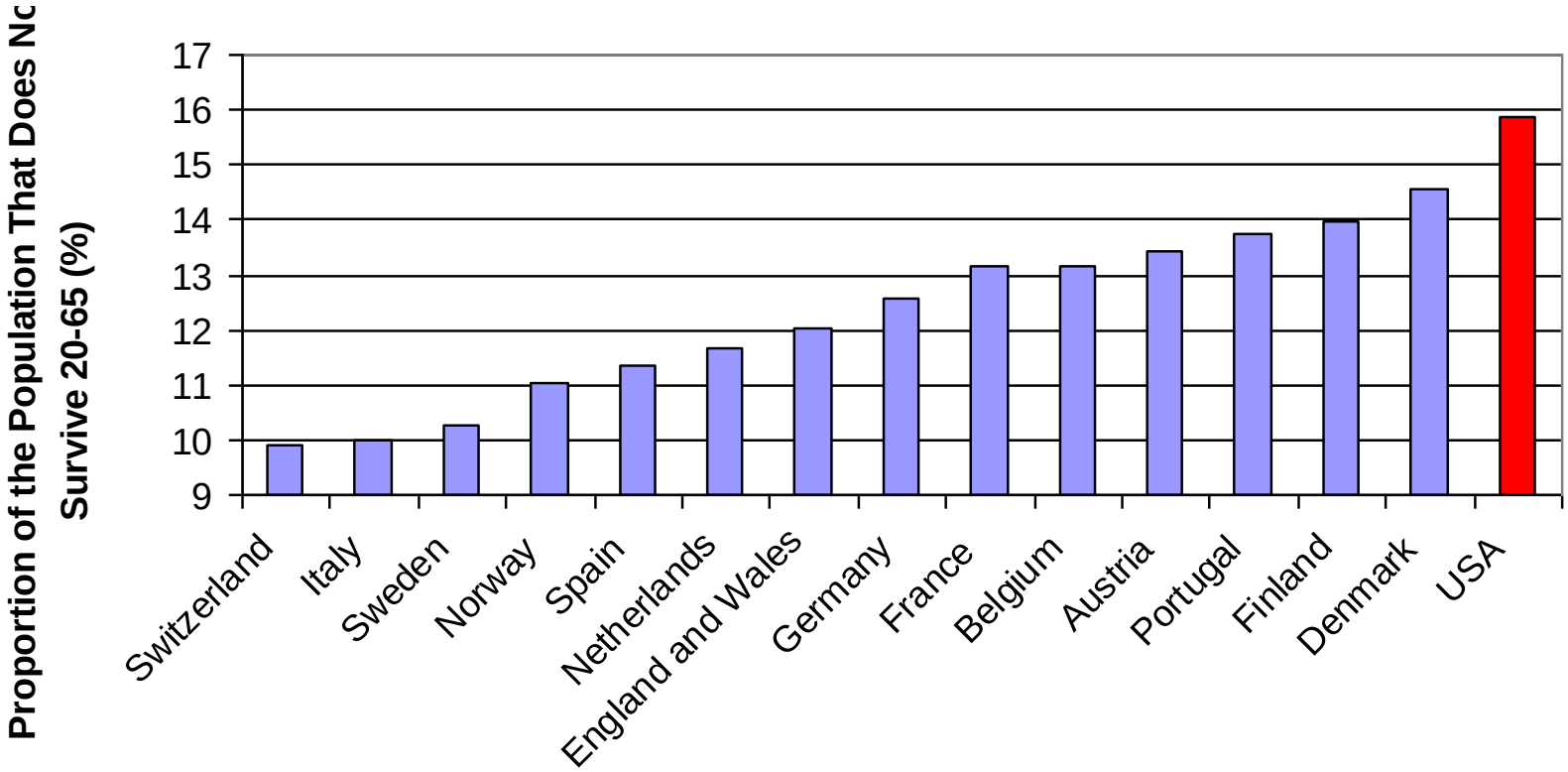
Source: World Bank, *World Development Indicators 2008* (Washington, D.C.: World Bank, 2008).

Figure 10
Healthy Life Expectancy: Western Europe vs. U.S.



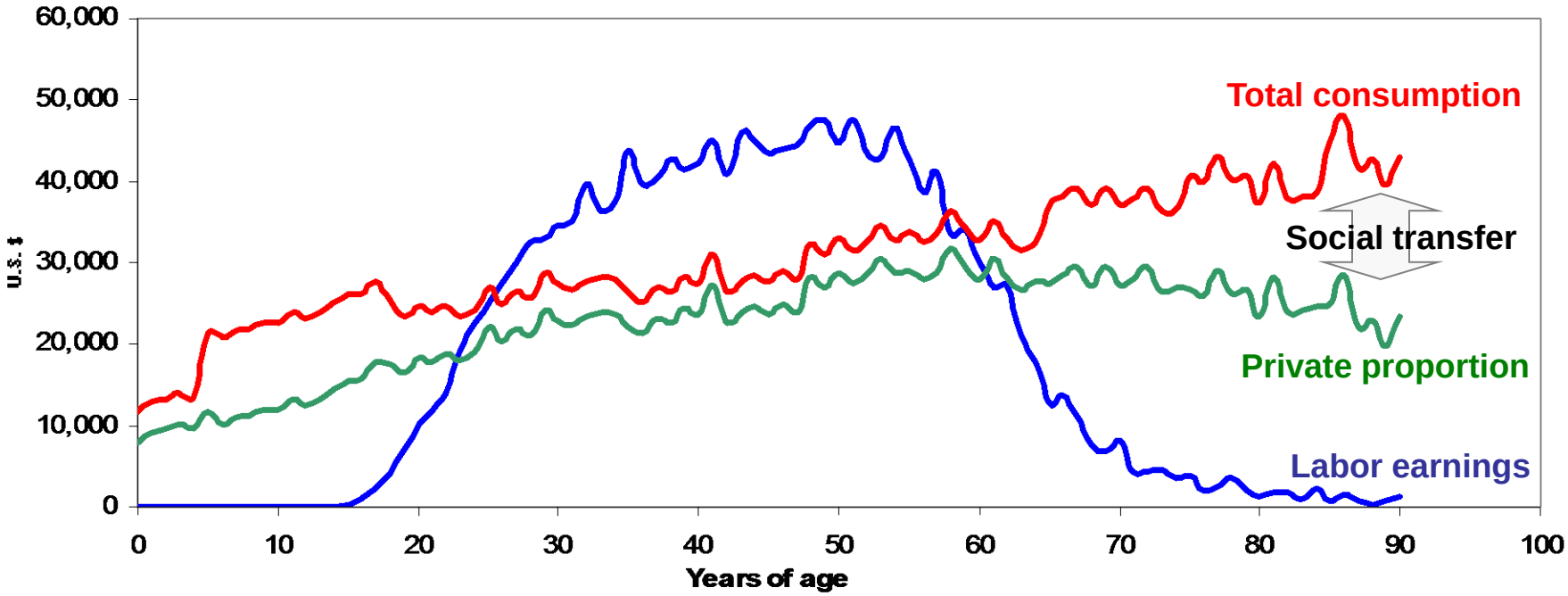
Source: Organisation for Economic Co-operation and Development, *Society at a Glance: OECD Social Indicators, 2005 Edition* (Paris: OECD, 2005).

Figure 11
Odds of *Not* Surviving from Age 20 to Age 65: Western Europe vs. U.S.



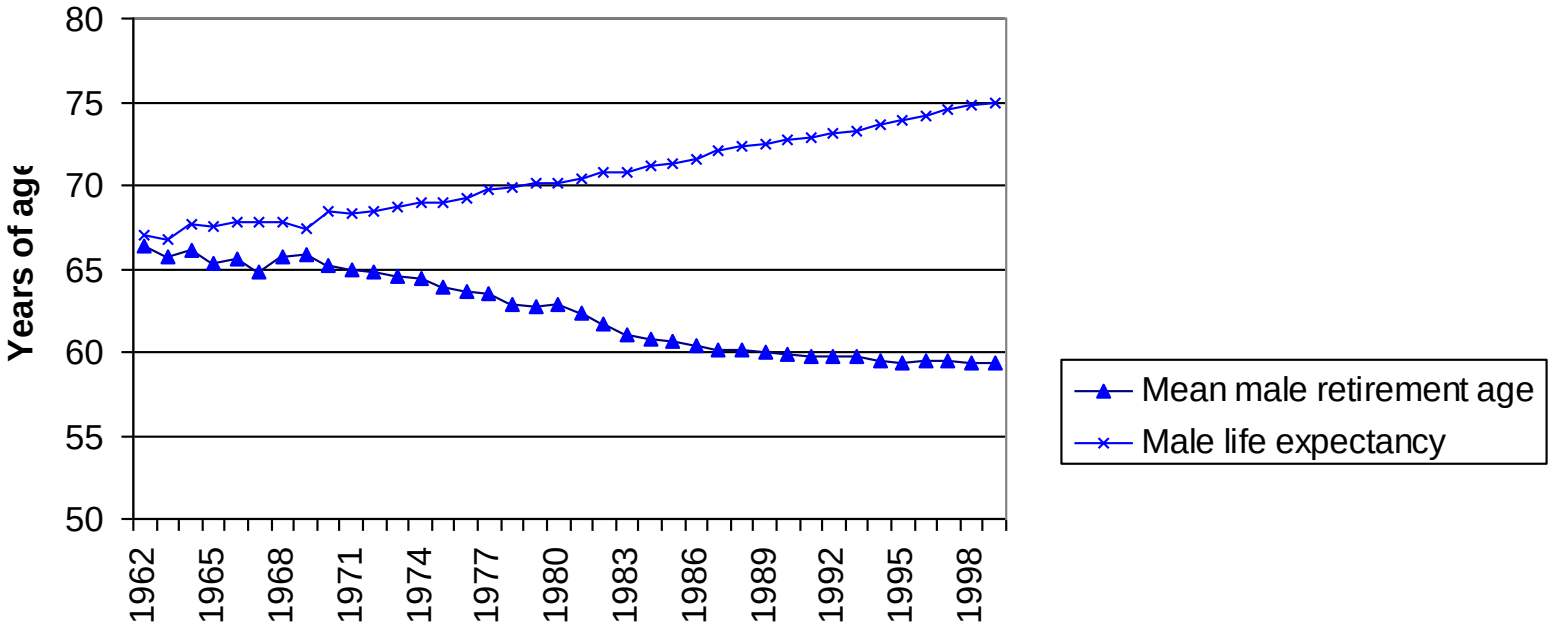
Note: Based on age-specific mortality schedules for the year 2004.
Source: University of California, Berkeley (USA) and Max Planck Institute for Demographic Research (Germany), Human Mortality Database, http://www.mortality.org (accessed July 3, 2008).

Figure 12
U.S. Consumption and Labor Earnings by Age, 2000



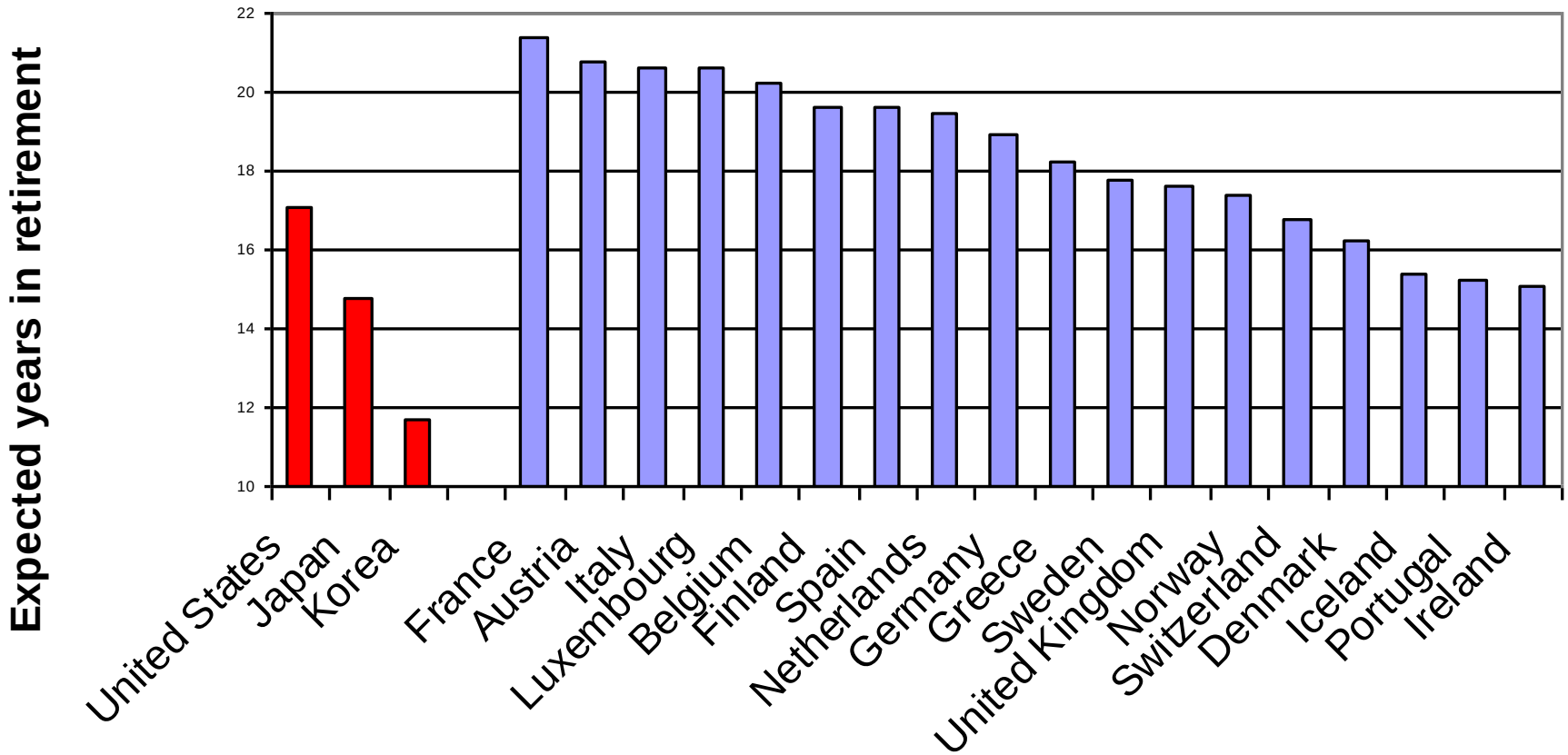
Source: Ronald D. Lee, *Global Population Aging and Its Economic Consequences* (Washington, D.C.: AEI Press, 2007).

Figure 13
Male Retirement Age vs. Life Expectancy in France, 1962-99



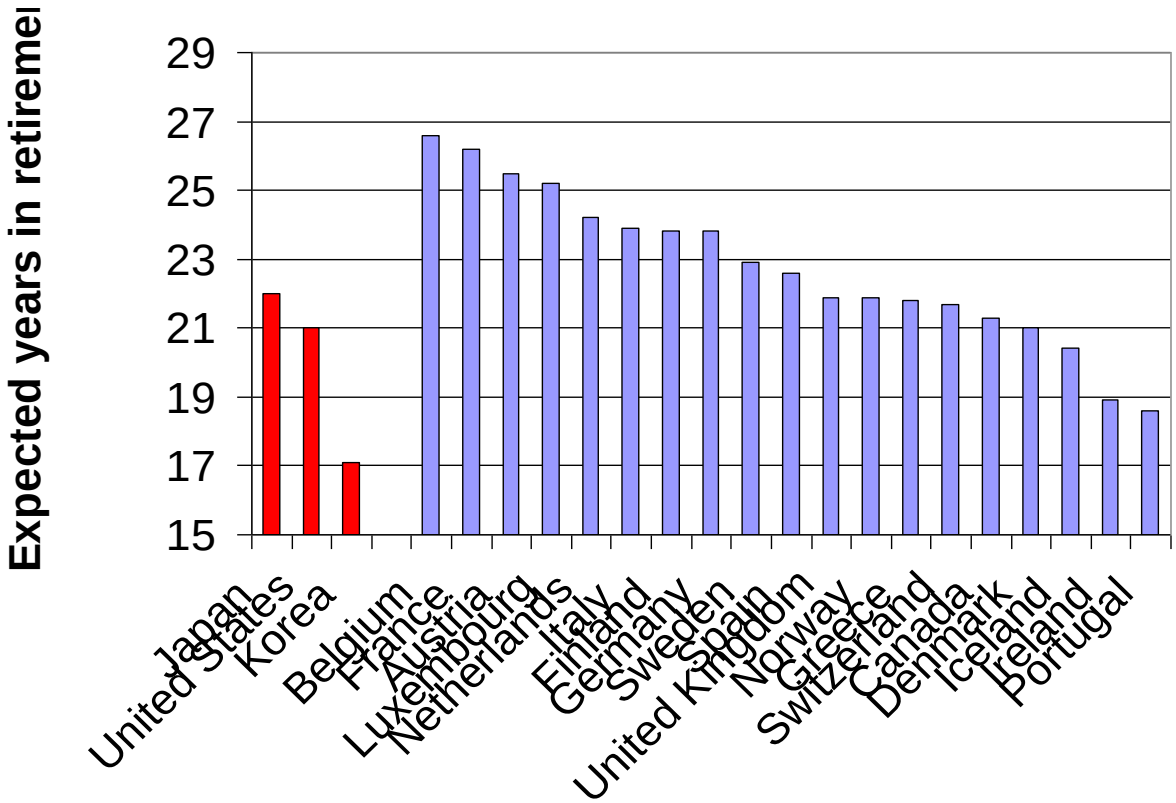
Sources: University of California, Berkeley (USA) and Max Planck Institute for Demographic Research (Germany), Human Mortality Database, http://www.mortality.org (accessed August 3, 2006); and Peter Scherer, *Age of Withdrawal from the Labour Force in OECD Countries* (occasional paper, Labor Market and Social Policy, OECD, Paris, France, January 11, 2002).

Figure 14
Expected Years in Retirement for Males, OECD Countries, 2004



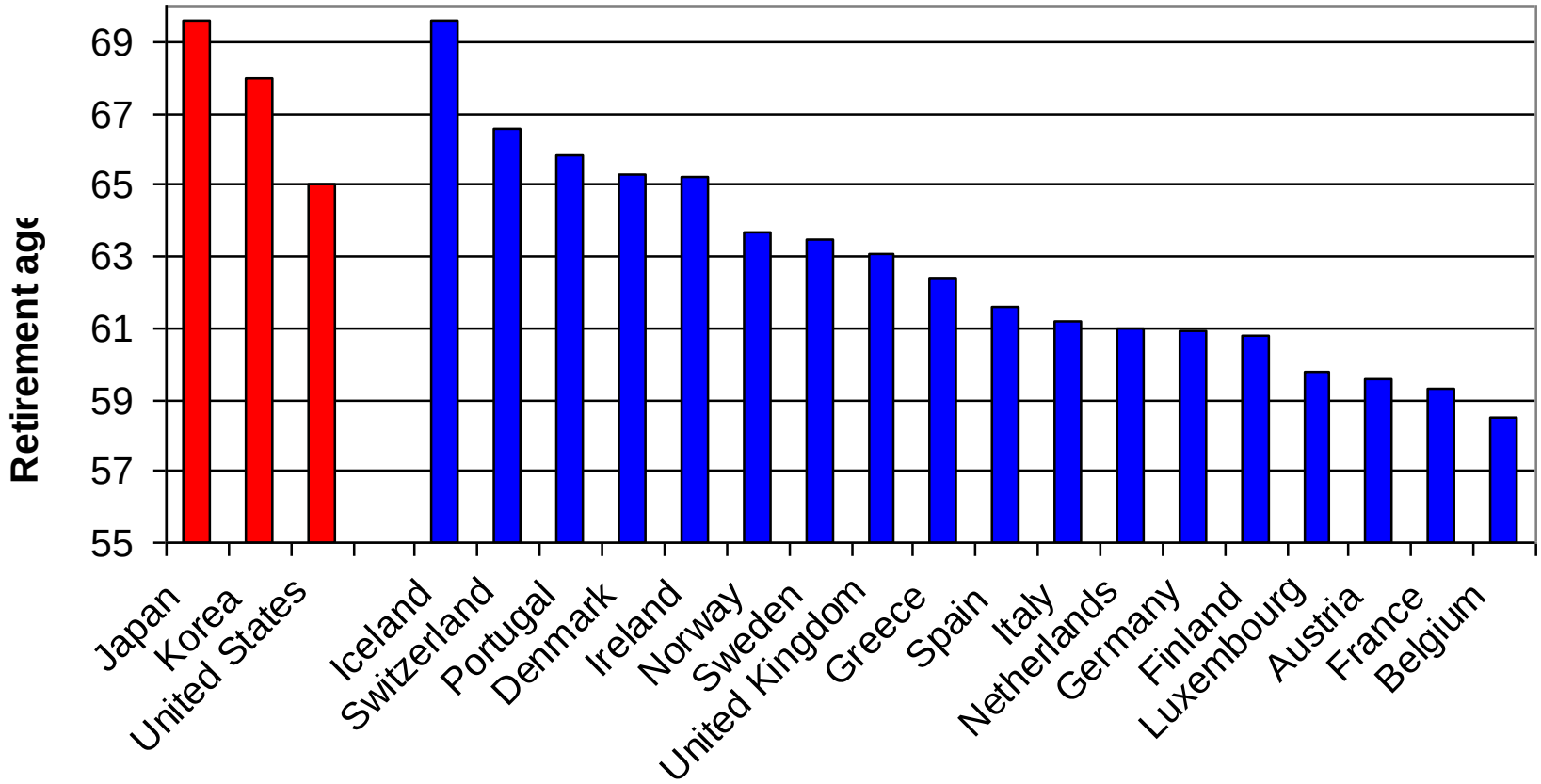
Source: Organisation for Economic Co-operation and Development (OECD), *Live Longer, Work Longer 2006* (Paris: Organisation for Economic Co-operation and Development, 2006).

Figure 15
Expected Years in Retirement for Females, OECD Countries, 2004



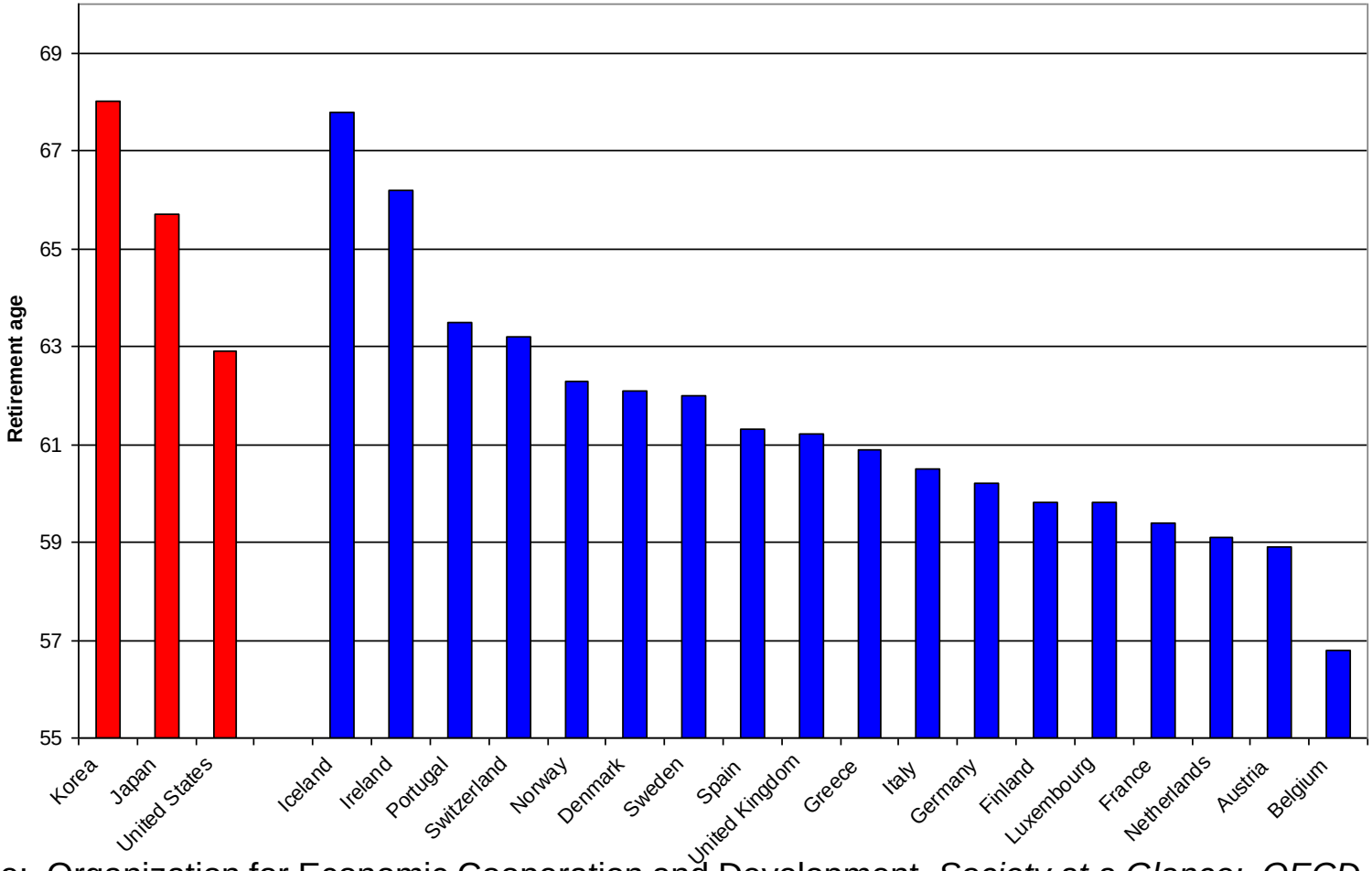
Source: Organisation for Economic Co-operation and Development (OECD), *Live Longer, Work Longer 2006* (Paris: Organisation for Economic Co-operation and Development, 2006).

Figure 16
Effective Age of Retirement for Men, 1997-2002: Western Europe vs. Selected Non-European OECD Countries



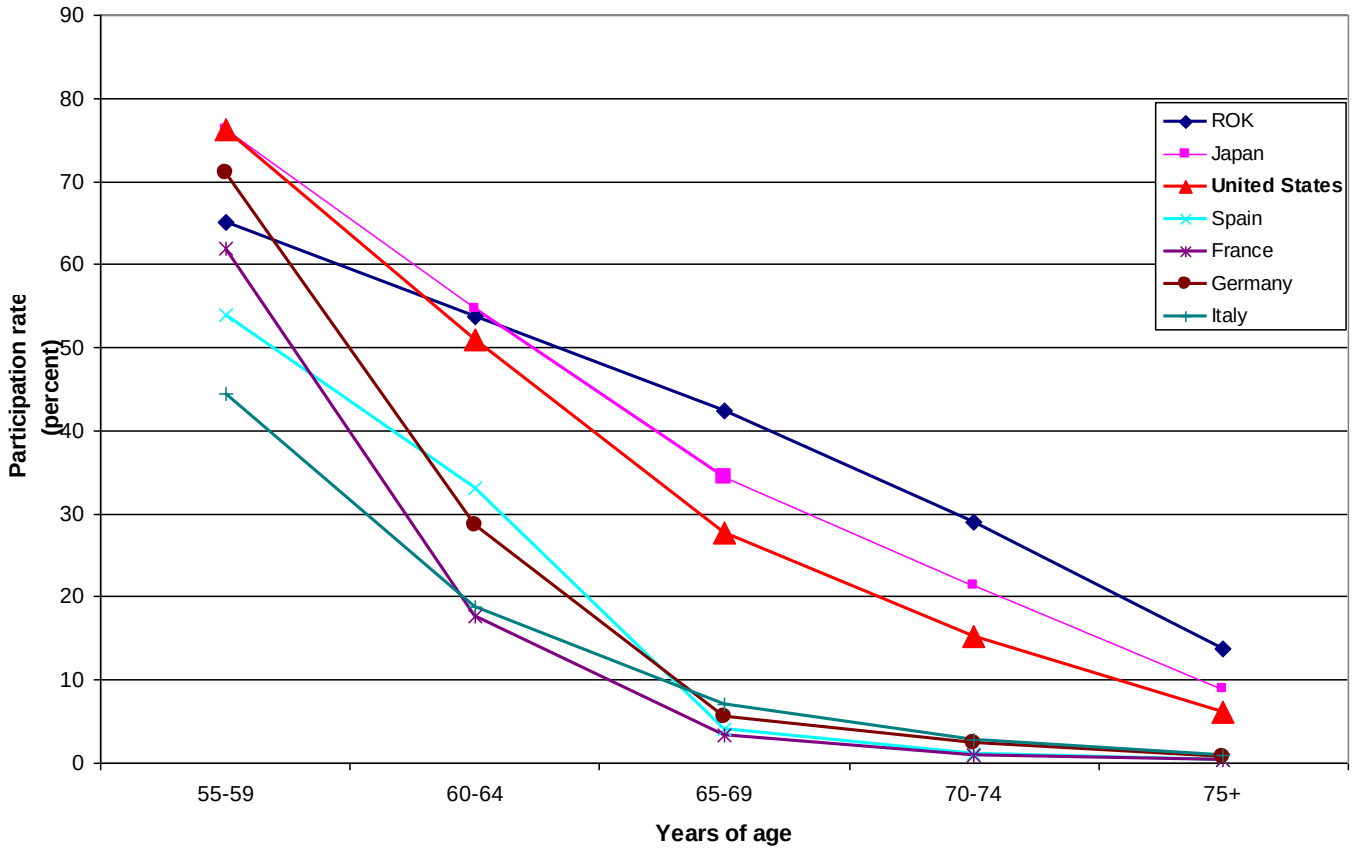
Source: Organization for Economic Cooperation and Development, *Society at a Glance: OECD Social Indicators,* 2005 Edition (Paris: OECD, 2005).

Figure 17
Effective Age of Retirement for Women, 1997-2002: Western Europe vs. Selected Non-European OECD Countries



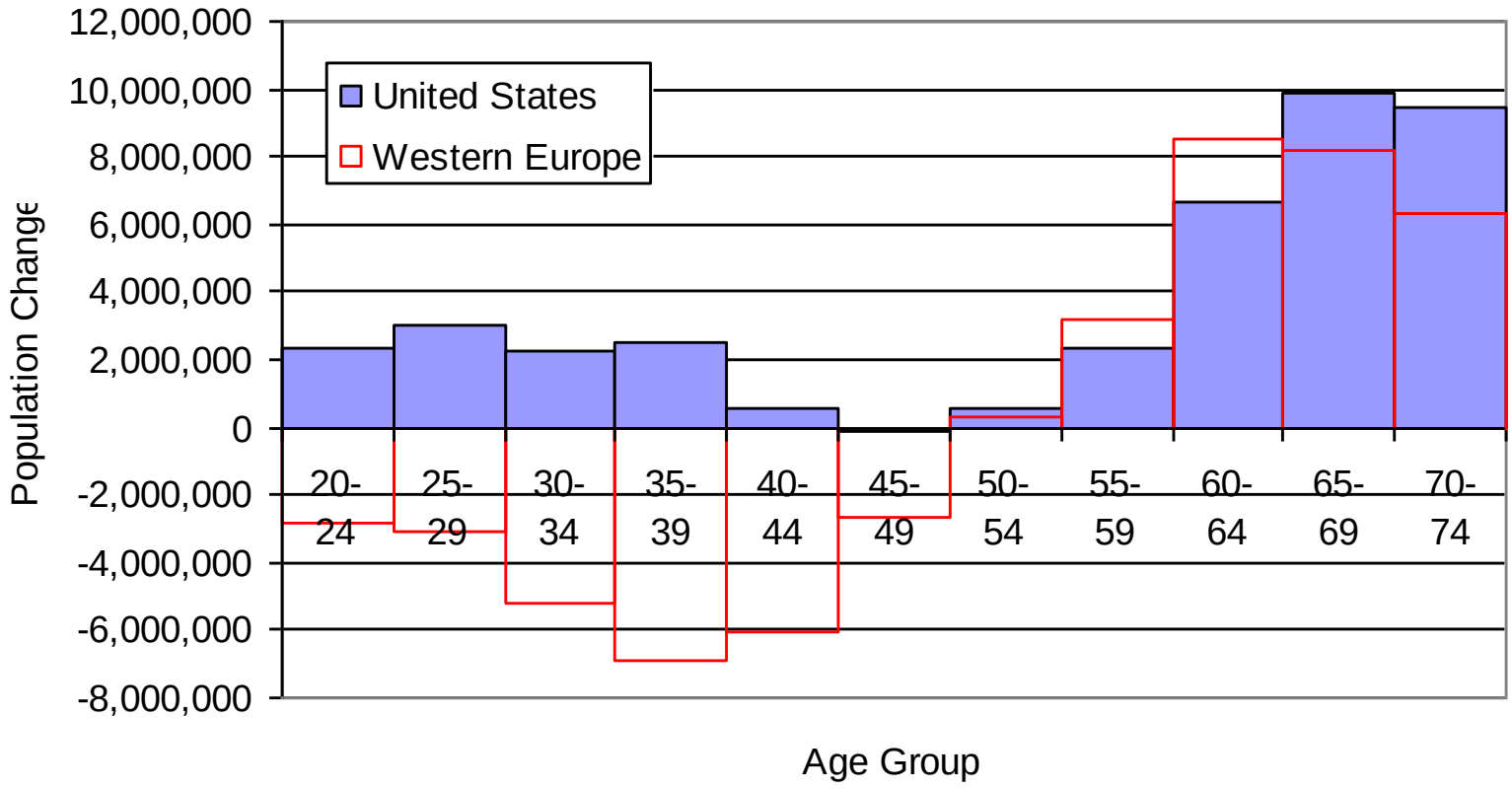
Source: Organization for Economic Cooperation and Development, *Society at a Glance: OECD Social Indicators,* 2005 Edition (Paris: OECD, 2005).

Figure 18
Labor Force Participation Rates: Select Western Europe vs. Non-Europe OECD



Source: International Labour Organization, LABORSTA Internet, http://laborsta.ilo.org/.
Note: Data are for 2006, except for France (2005).

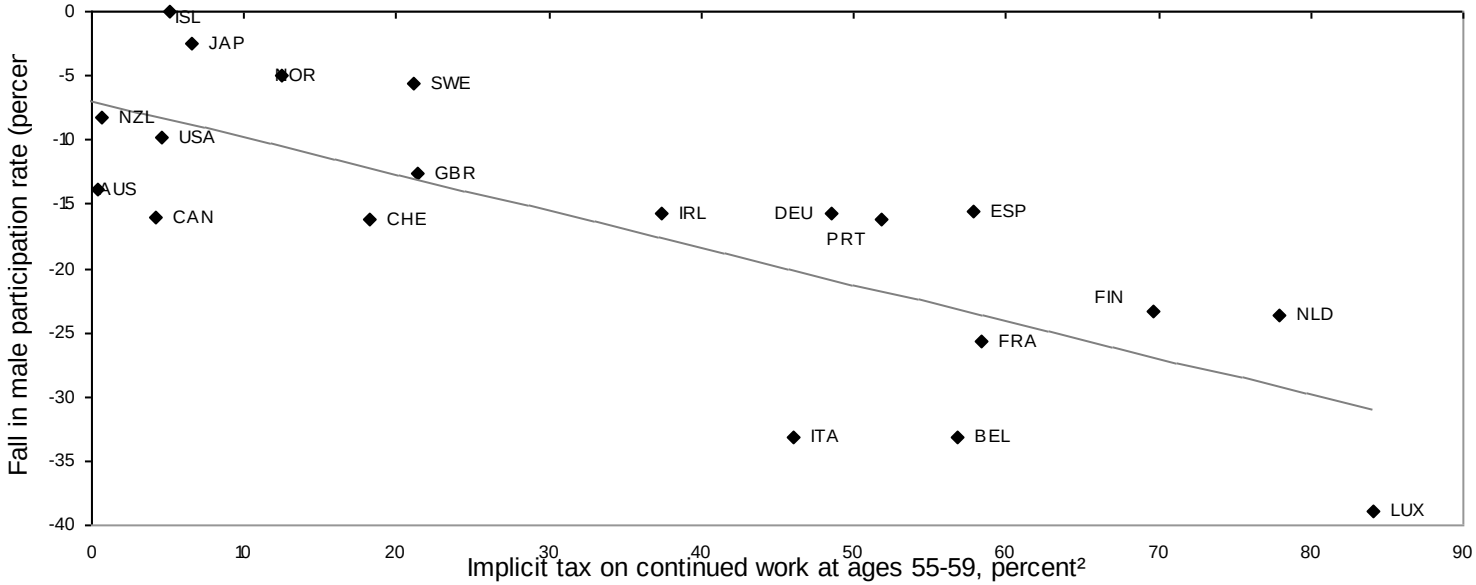
Figure 19
Population Change in W. Europe vs US: 2005-2030



Source: U.S. Census Bureau, International Data Base, http://www.census.gov/cgi-bin/ipc/idbagg [accessed July 7, 2008].

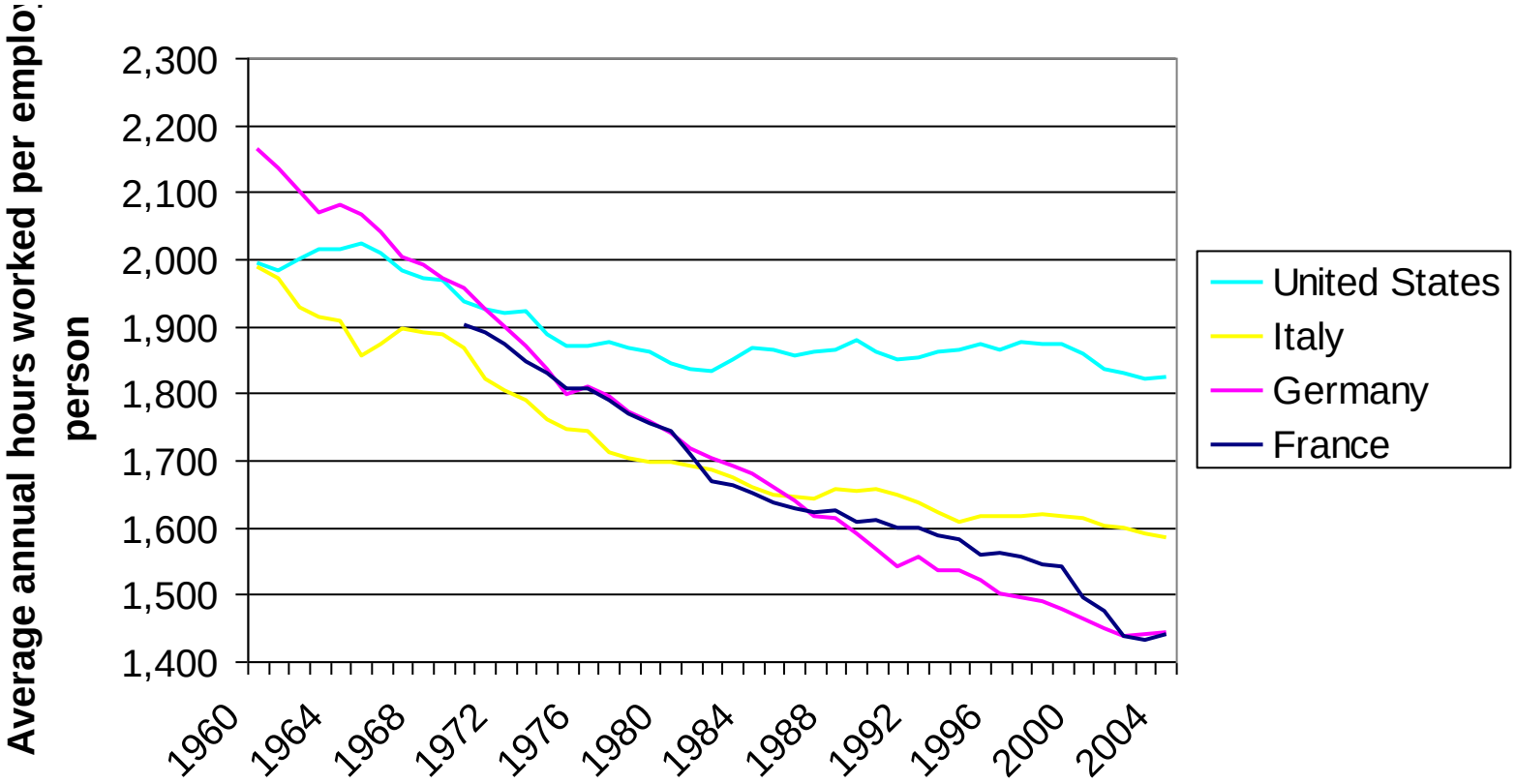
Figure 20: Incentives to Retire and Retirement Behavior

Fall in male labor force participation between ages 50-54 and 55-59



1. Difference in participation rates between the age groups 55-59 and 50-54 as a percentage of the participation rate of those ages 50-54 years.
2. The implicit tax on working an additional year is the forgone transfer/pension income plus the additional pension contributions paid, minus any increase in future pensions as a result of delayed retirement, all expressed as a share of income from work. The calculations in all cases take account of the "regular" old-age pension scheme but consider somewhat different early retirement pathways depending on the country in question or, where such schemes do not apply widely, no such pathways.
Source: Figure and text from Geir H. Haarde, “Strengthening Growth and Public Finances in an Era of Demographic Change” (background paper, Organisation for Economic Co-operation and Development, Paris, France, May 13-14, 2004). Original data from Romain Duval, “The Retirement Effects of Old-Age

Figure 21
Annual Hours Worked:
United States vs. Major Continental Economies



Note: Pre-1991 values for Germany are West Germany only. OECD statistical sources caution that 'The[se] data are intended for comparisons of trends over time.' Source: Graphic originally from Alesina, Alberto, and Edward Glaeser, "Work and Leisure in the U.S. and Europe: Why so Different?" (discussion paper 2068, Harvard Institute of Economic Research, Cambridge, Mass., April 2005), figure 1. Reconstructed using SourceOECD, Employment and Labour Market Statistics, http://www.sourceoecd.org (accessed July 27, 2007).