Global Population Trends: Shaping The Strategic Future

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The Sixth Herzliya Conference

On the Balance of Israel's National Security
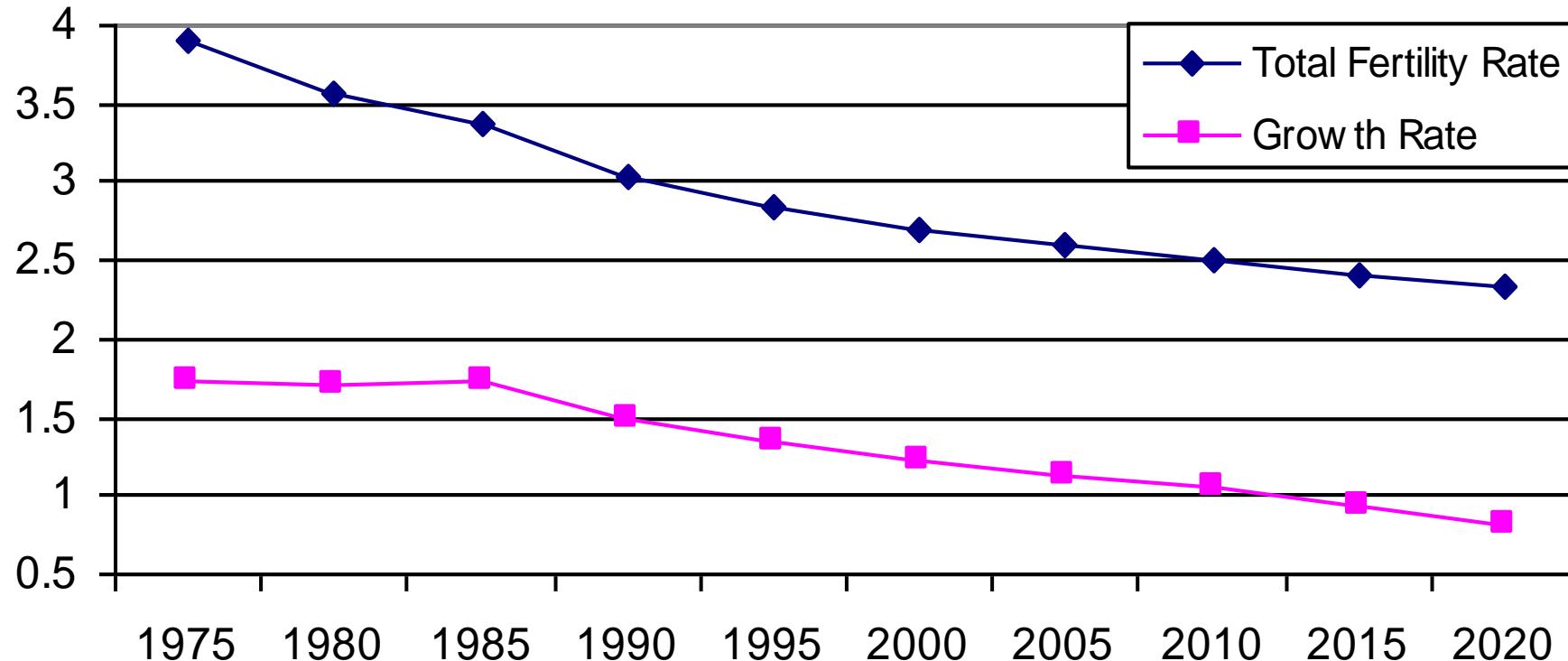
January 21-24, 2006

Herzliya, Israel

Four Strategically Significant World Population Trends:

- **The Global March Into "Sub-Replacement Fertility"**

- **Sustained Reversals In Health Progress**

- **Rising Sex Ratios At Birth**

- **United States 'Demographic Exceptionalism'**

# World Total Fertility and Population Growth Rates:
1975-2025 (projected)
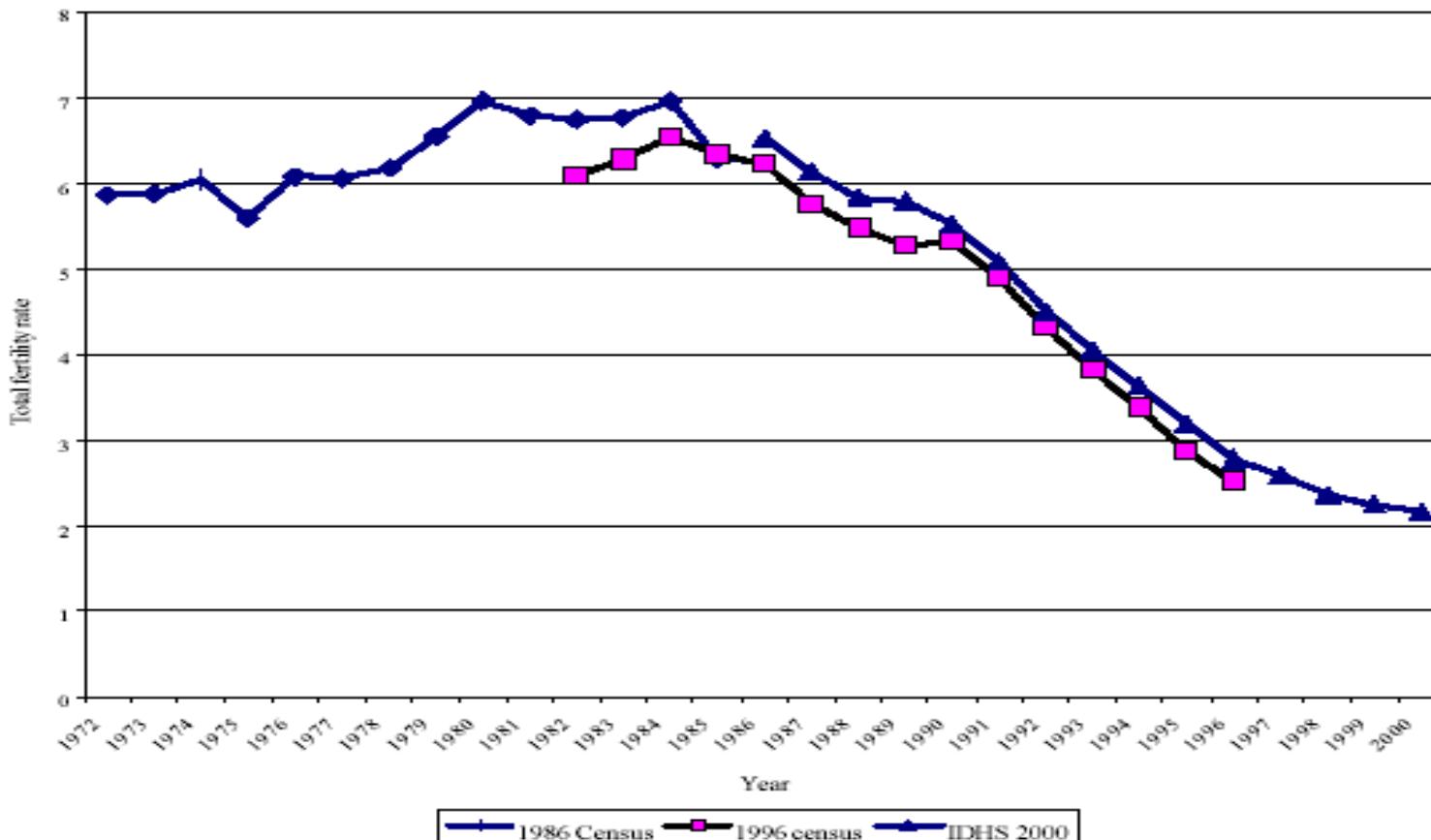
Total Fertility Rate of Less Than 2.1: U.S. Census Bureau Projections for the World, 2004

W. Europe	TFR
Andorra	1.28
Austria	1.35
Belgium	1.64
Denmark	1.74
Finland	1.73
France	1.85
Germany	1.38
Gibraltar	1.65
Greece	1.32
Guernsey	1.38
Iceland	1.93
Ireland	1.87
Italy	1.27
Jersey	1.57
Liechtenstein	1.51
Luxembourg	1.79
Malta	1.49
Isle of Man	1.65
Monaco	1.76
Netherlands	1.66
Norway	1.78
Portugal	1.46
San Marino	1.32
Spain	1.27
Sweden	1.66
Switzerland	1.42
United Kingdom	1.66

E. Europe	TFR
Albania	2.05
Bosnia & Herzegovina	1.71
Bulgaria	1.37
Croatia	1.39
Czech Republic	1.18
Hungary	1.31
Macedonia	1.56
Poland	1.38
Romania	1.35
Slovakia	1.31
Slovenia	1.23
Serbia & Montenegro	1.56

C.I.S.	TFR
Armenia	1.31
Belarus	1.36
Georgia	1.40
Kazakhstan	1.90
Moldova	1.78
Russia	1.26
Ukraine	1.37

Baltics	TFR
Estonia	1.39
Latvia	1.25
Lithuania	1.17

Oceania	TFR
Australia	1.76
New Zealand	1.79
Northern Mariana Islands	1.33

North America	TFR
Bermuda	1.90
Canada	1.61
Saint Pierre & Miquelon	2.05
United States	2.07

Asia	TFR
Burma	2.08
China	1.69
Cyprus	1.85
Hong Kong S.A.R	0.91
Iran	1.88
Japan	1.38
Lebanon	1.95
Macau S.A.R.	0.98
Singapore	1.04
South Korea	1.25
Sri Lanka	1.88
Taiwan	1.57
Thailand	1.89
Turkey	1.98
Vietnam	1.97

Latin America	TFR
Anguilla	1.74
Aruba	1.79
Barbados	1.65
Brazil	1.94
Cayman Islands	1.90
Chile	2.06
Cuba	1.66
Dominica	1.98
Guadeloupe	1.91
Guyana	2.06
Jamaica	1.98
Martinique	1.79
Montserrat	1.79
Netherlands Antilles	2.02
Puerto Rico	1.91
Saint Vincent & the Grenadines	1.90
Trinidad & Tobago	1.77
British Virgin Islands	1.72
Uruguay	1.96

Africa	TFR
Algeria	2.04
Mauritius	1.97
Saint Helena	1.54
Seychelles	1.77
Tunisia	1.79

# Own-children estimates of total fertility rates for Iran: 1972-2000
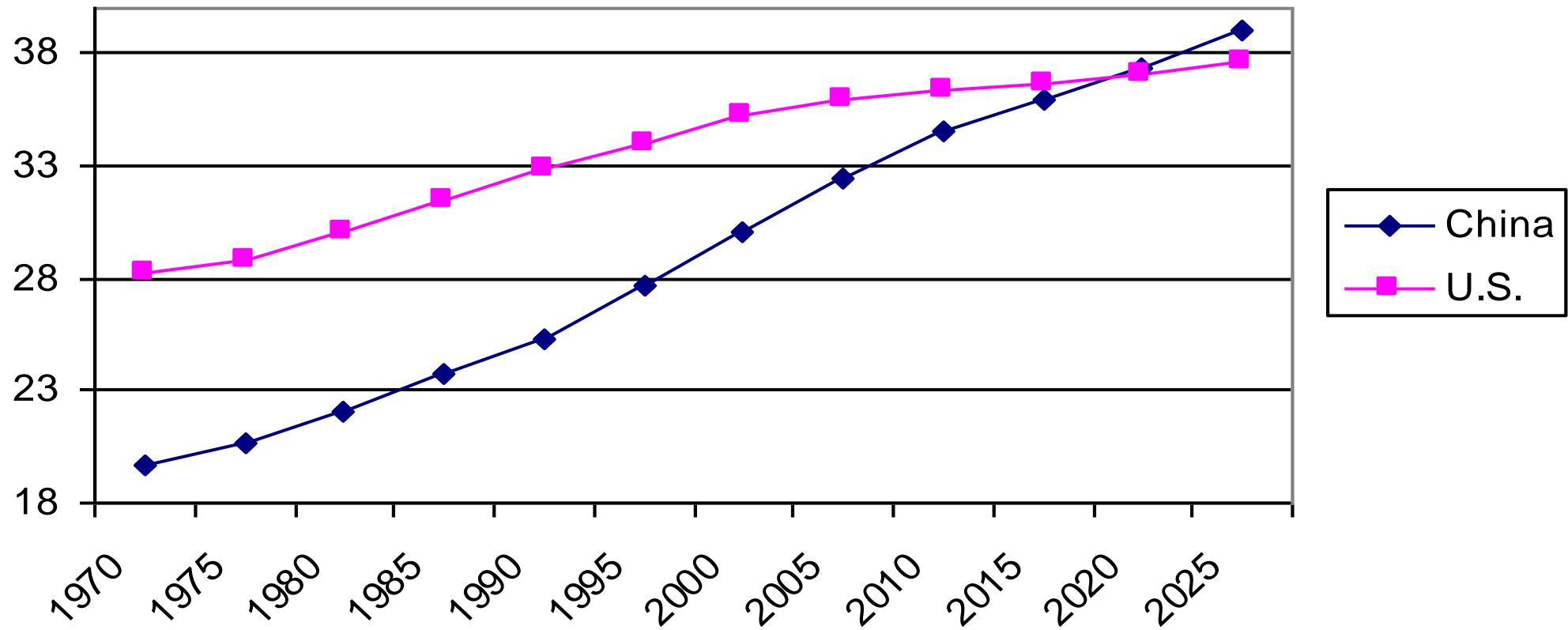
Source: Figures calculated by the author using the own-children method applied to the 1986 and 1996 censuses, and the 2000 Iran Demographic and Health Survey. Figure Selected from "Recent changes and the future of fertility in Iran," Mohammad Jalal Abbasi-Shavazi, Department of Economic and Social Affairs, Population Division, United Nations.

Population Structure:
China, 2000 vs. 2025 (projected)

Legend: 2025, 2000

Age groups (partial labels): 90-94, 75-79, 60-64, 45-49, 30-34, 15-19, 0-4

X-axis: 80000 60000 40000 20000 0 20000 40000 60000 80000
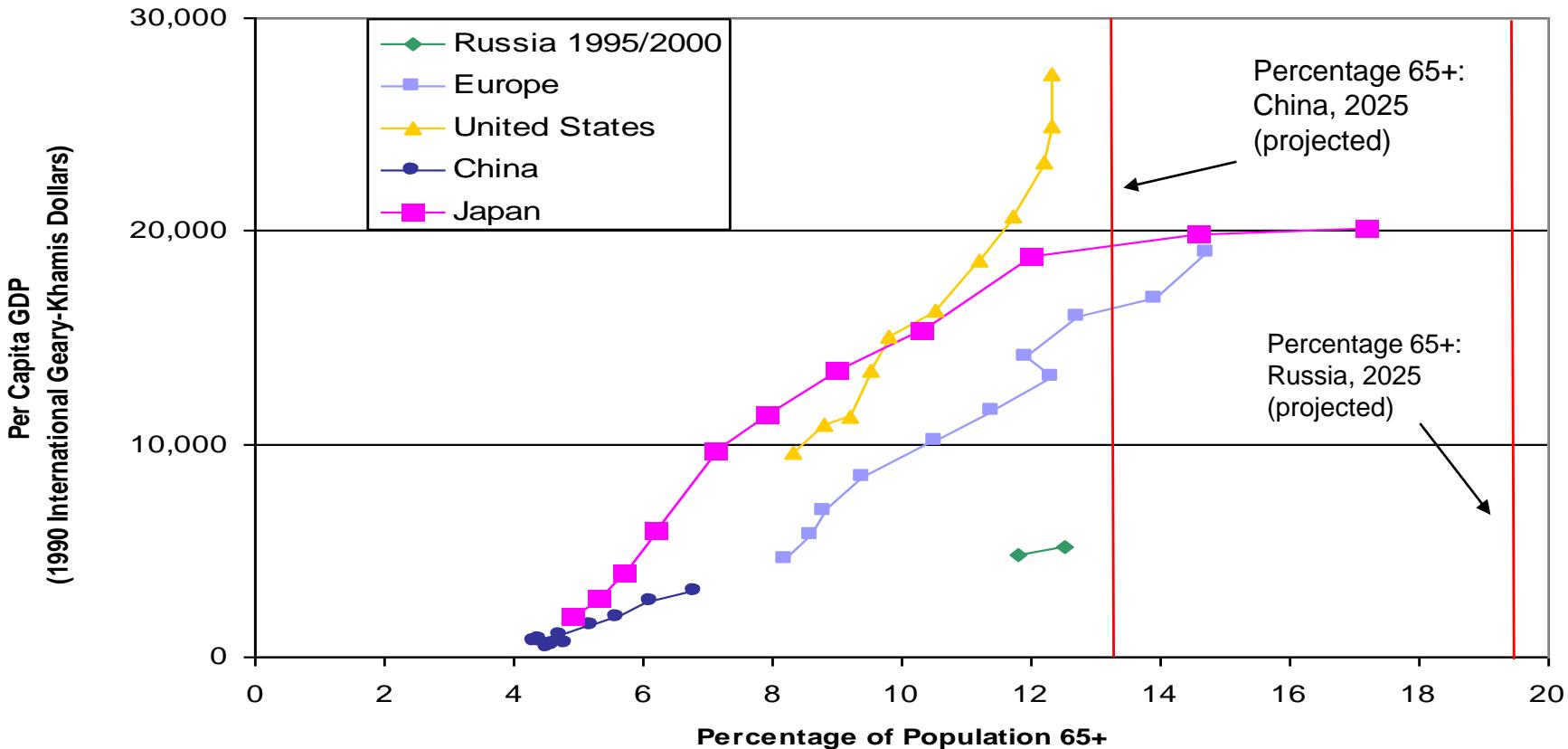
China and the United States: Median Age, 1970-2025

Per Capita GDP vs. Percent Population Ages 65+: Russia, Europe, United States, and China 1950-2000

Note: Europe data for 13 countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Netherlands, Norway, Sweden, Switzerland, U.K.
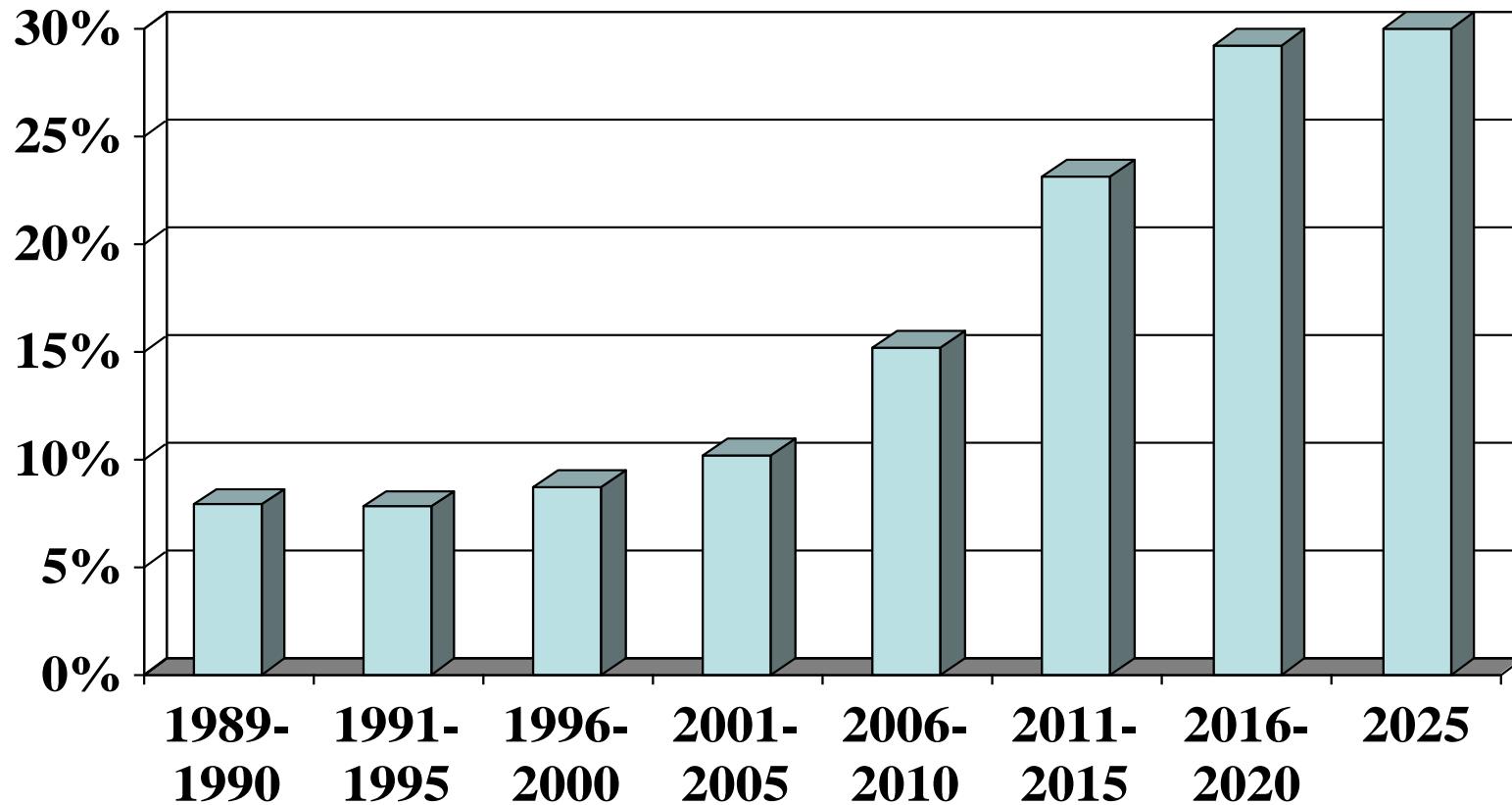
Coverage and Actuarial Balances of Current Public Pension System: USA, Japan, China (percent)

	Coverage	Net Present Value Unfunded Liabilities vs. GDP
USA 2004	87[1]	32
Japan 2001	c. 100[2]	60-70[3]
China 2003	c.16	125-150

Notes: 1. Proportion of fully insured persons 20+ in OASDI, 2003. 2. Mandatory participation of persons 20+ in basic plan. 3. Estimates for burden post-2000 round of reforms.

Sources: China: Loraine A. West and Daniel Goodkind, "Population Aging and Social Safety Nets in China: Factors and Trends Affecting Policy Trade-Offs." U.S. Census Bureau, International Programs Center, April 2003 (unpublished paper); Japan: Hamid Faruqee and Martin Muehleiser, "Population Aging in Japan: Demographic and Fiscal Sustainability," IMF Working Paper WP/01/40, April 2001, http://www.imf.org/external/pubs/ft/wp/2001/wp0140.pdf USA: Derived from U.S. Social Security Administration, Annual Statistical Supplement 2003 (March 2004), Table 4.c5,

Percentage of Age-60 Chinese Women with No Born Sons by Year of Her 60th Birthday: Illustrative Calculation
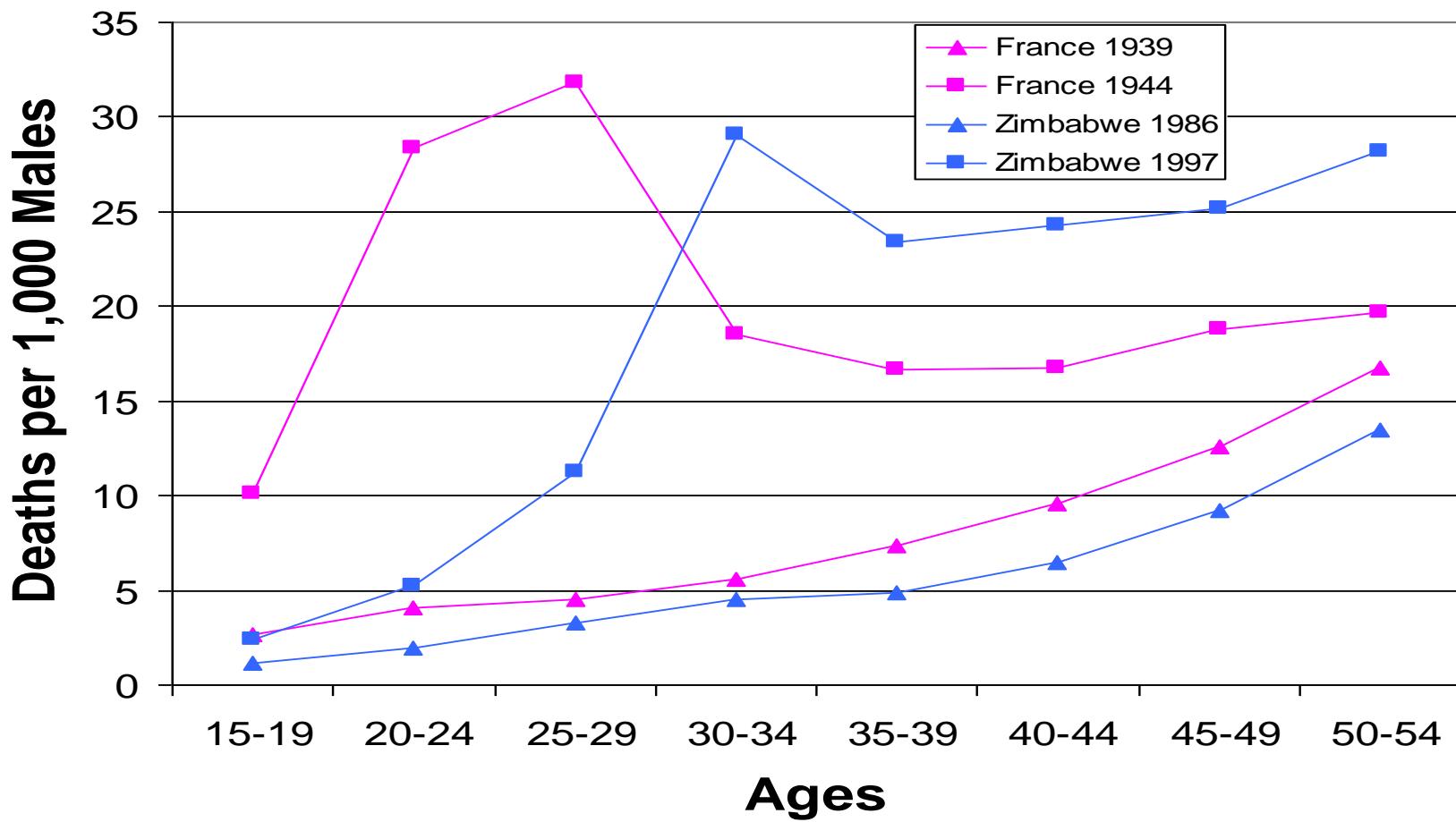
Notes: Calculations are illustrative, based upon simplifying assumptions: 1. Reported parity distributions in 1990 census are accurate; 2. SRB as in previous graphic; 3. SRB not parity-specific; 4. Childbearing completed by age 35 for the 2025 cohort of 60-year old women; 5) Posits the following distribution of childbearing for the 2025 cohort of 60-year-old women: no children, 3%; one child, 25%; two children, 65%; three or more children, 7%.

Sources:Derived from Feeney et. al. 1993, op cit; China National Bureau of Statistics 2002, op cit.

Countries facing long-term decline in life expectancy at birth (1990 vs. 2010): U.S. Census Bureau Current Projections

Sub-Saharan Africa

	1990	2010
Angola	36.7	35.0
Benin	49.1	47.9
Botswana	66.8	34.1
Burkina Faso	46.8	43.5
Cameroon	50.1	47.9
Central African Rep.	48.5	41.0
Congo	52.6	47.0
Djibouti	43.8	43.4
Eritrea	51.8	48.9
Ethiopia	45.6	40.0
Gabon	58.1	52.9
Ghana	56.3	55.6
Kenya	60.3	53.5
Lesotho	44.5	36.5
Malawi	43.3	36.9
Mozambique	45.3	38.5
Namibia	63.7	43.3
So. Africa	63.2	48.8
Swaziland	65.1	33.0
Tanzania	50.0	47.2
Togo	56.6	50.7
Zambia	44.3	41.2
Zimbabwe	60.6	34.6

Latin America & Caribbean

	1990	2010
Bahamas	67.2	65.8
Barbados	73.1	71.2
Dominican Rep.	70.0	66.7
Grenada	66.9	66.3
Honduras	67.5	62.2
Panama	72.9	72.1
Trinidad & Tobago	69.5	64.5

Commonwealth of Independent States

	1990	2010
Azerbaijan	68.4	66.0
Belarus	70.9	70.6
Russia	68.5	67.0
Tajikistan	67.2	66.5
Turkmenistan	64.7	63.7
Ukraine	69.7	68.5
Uzbekistan	67.4	66.2

Oceania

	1990	2010
Nauru	66.7	64.6

Male Death Rates:
France in World War II vs. Zimbabwe today

Sources: http://gfeeney.com/pubs/2001-aids-zimbabwe/table1.xls accessed June 7, 2004.
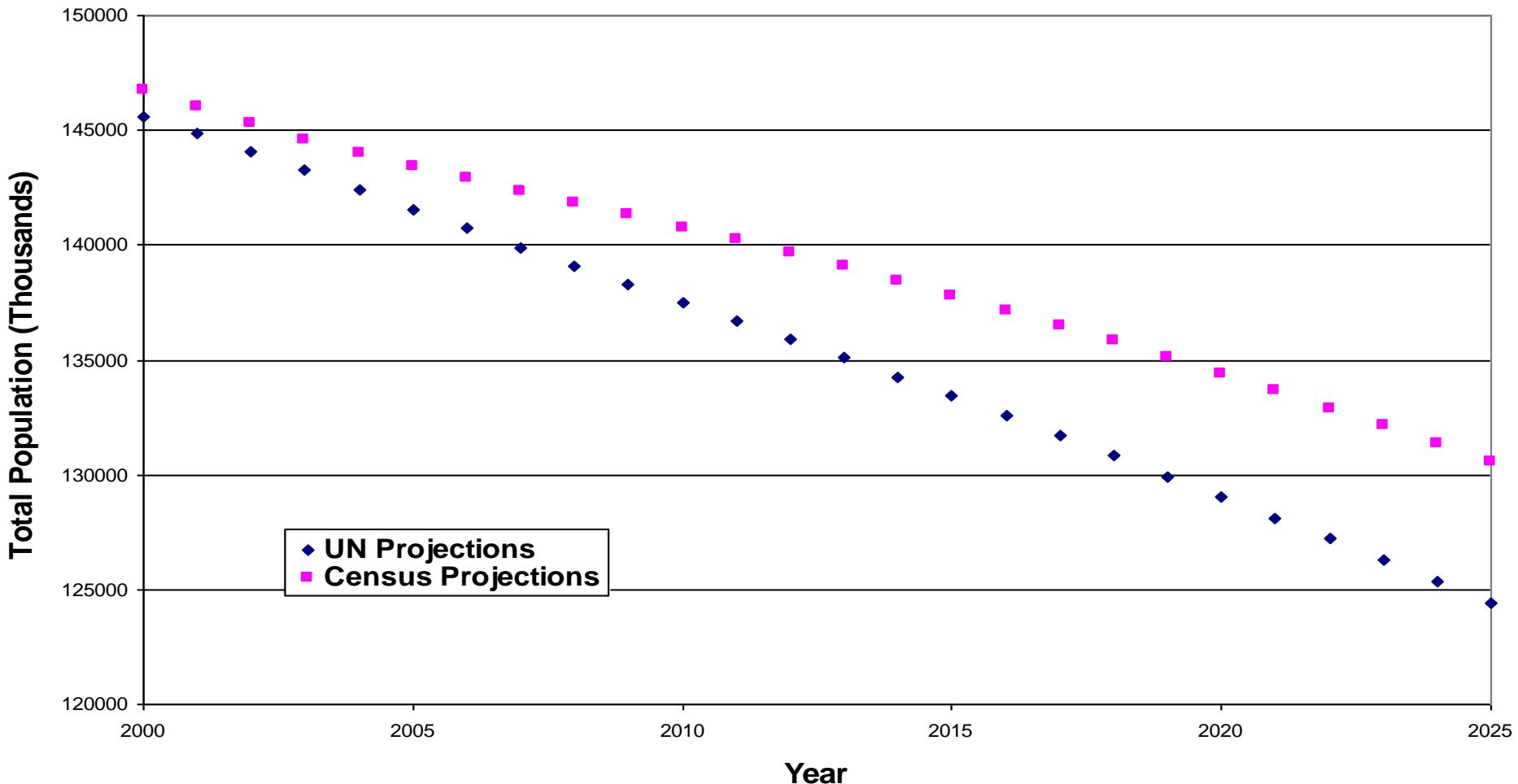
htttp://www.demog.berkeley.edu/wilmoth/mortality/France/LifeTables/fmper.lt.5x1.new accessed June 7, 2004.

# Projected population structure with and without the AIDS epidemic, Botswana, 2020

Source: *US Census Bureau, World Population Profile 2000*
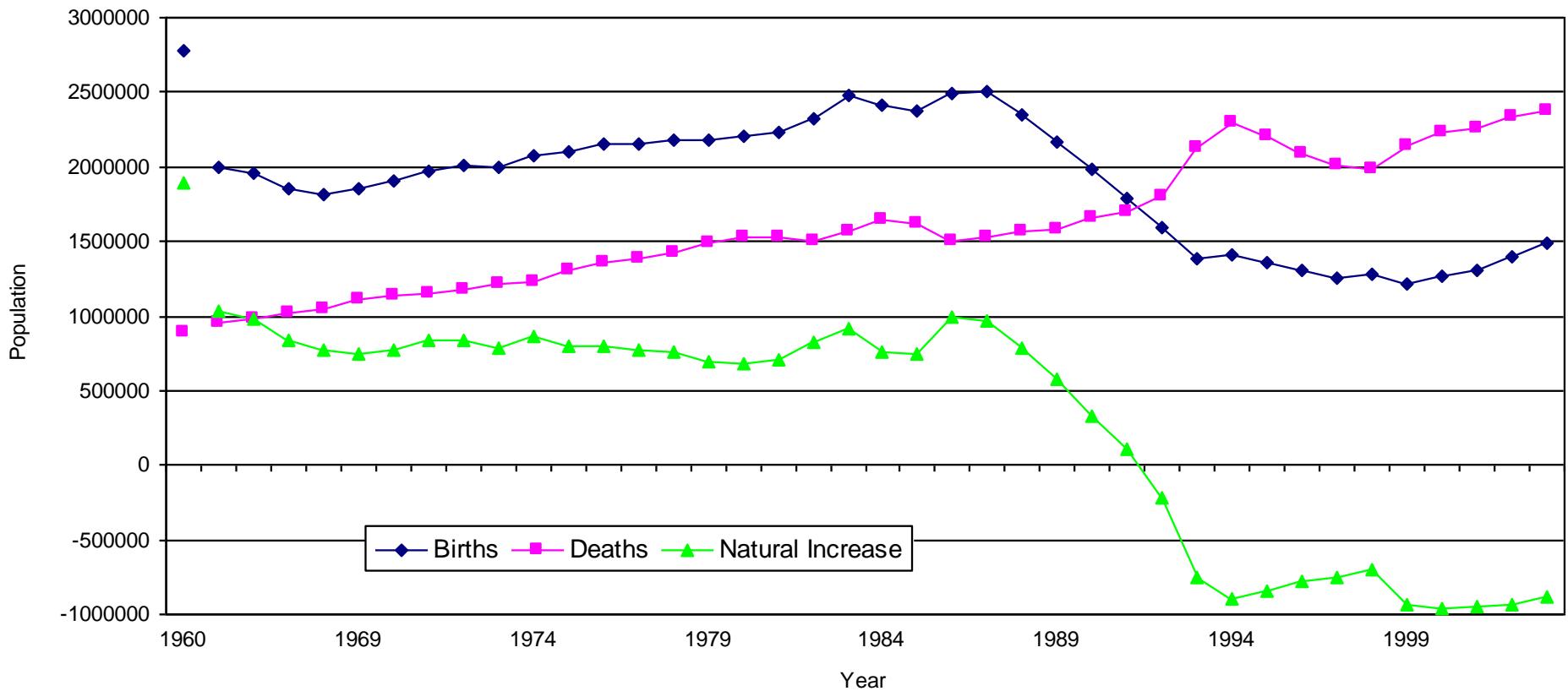
Projected Total Population: Russia, 2000-2025

Sources: U.S. Bureau of the Census, International Data Base

United Nations Population Division, World Population Prospects: The 2002

Births, Deaths, and Natural Increase in Russian Population: 1960-2003
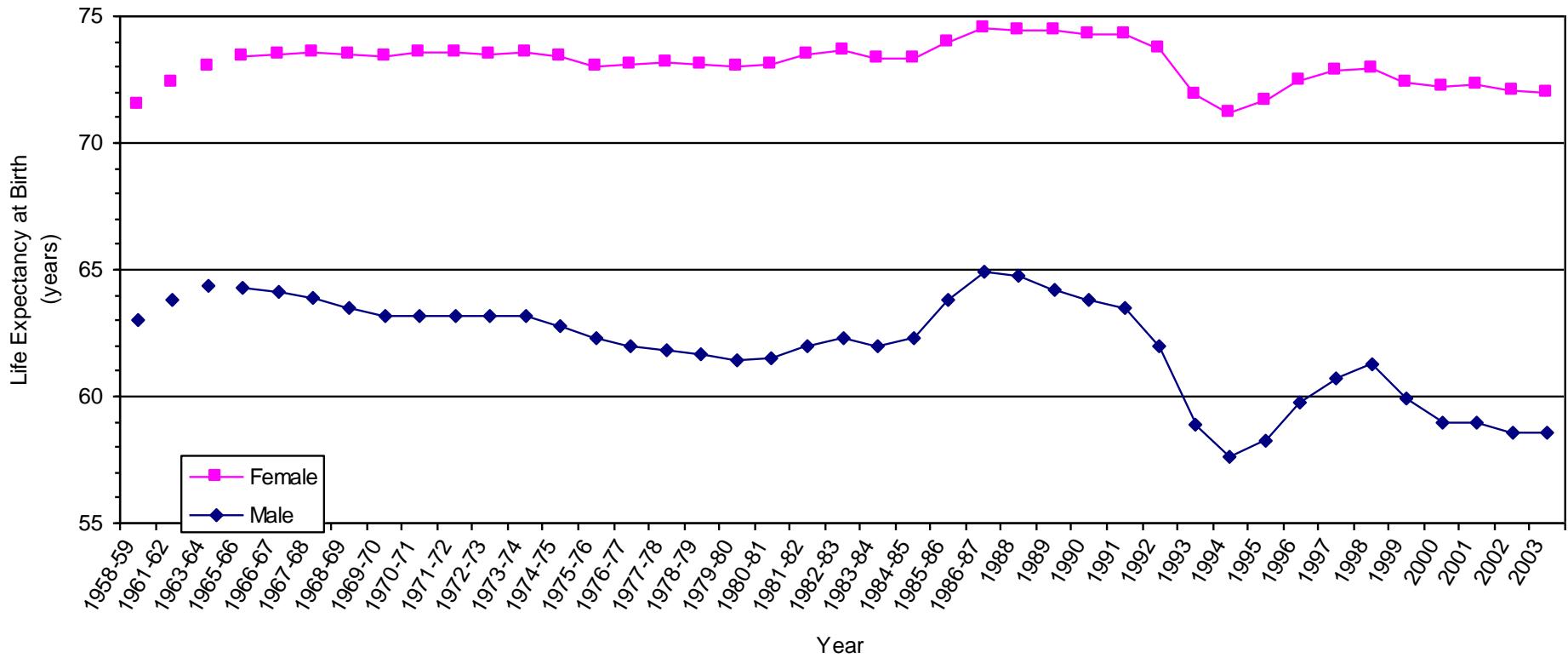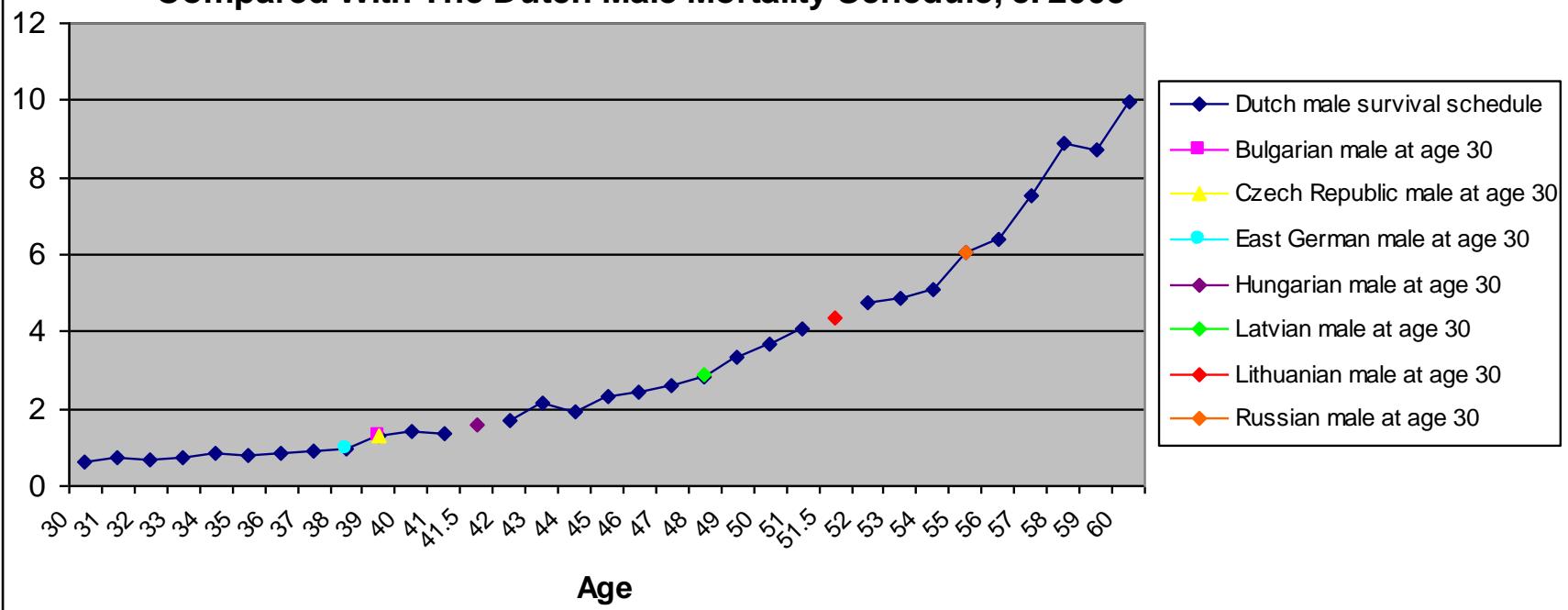
Life Expectancy at Birth
## 1958-59, 1961-62, 1963-64, 1965-2003
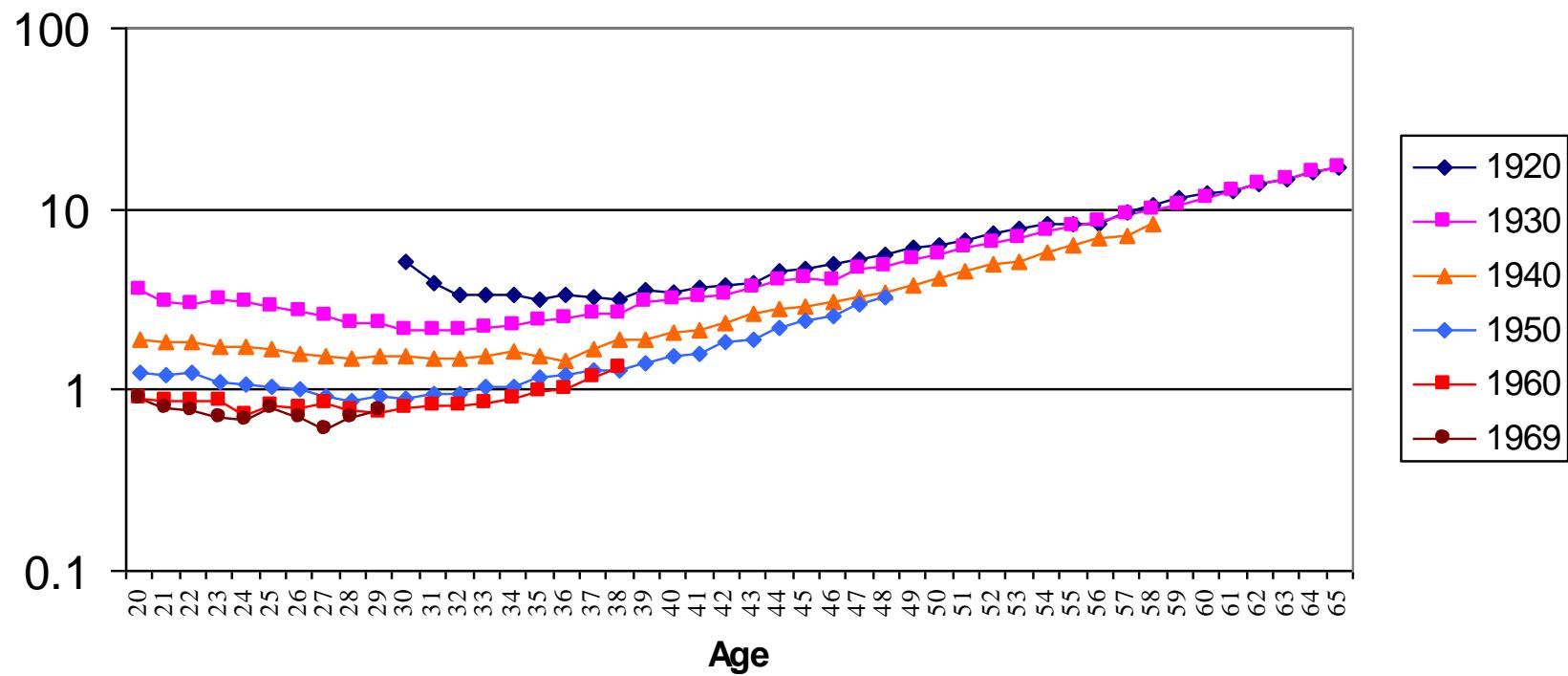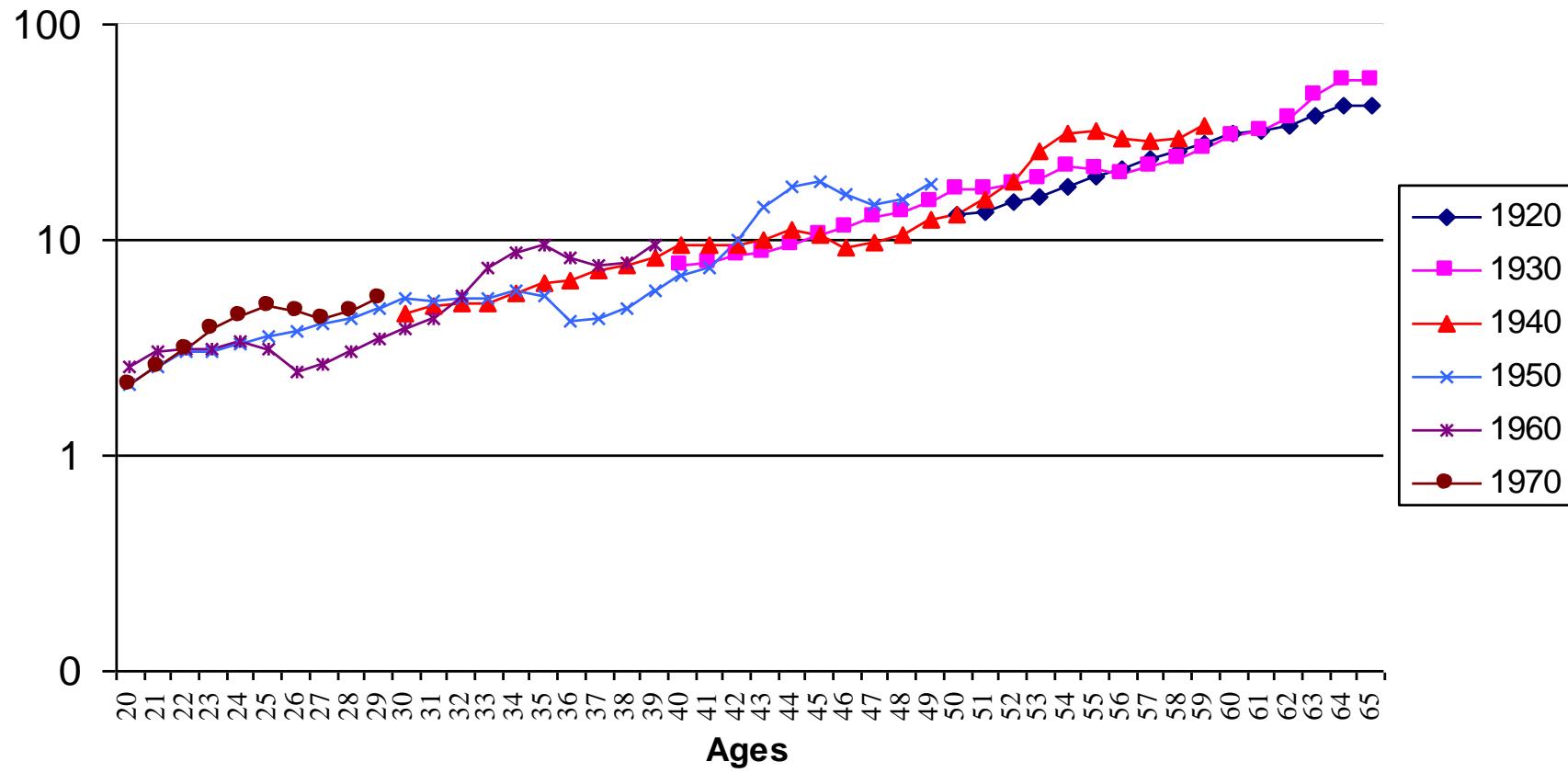
"More Aged Than Their Years":
Mortality At Age 30 for Men In Selected Post-Socalist Countries
Compared With The Dutch Male Mortality Schedule, c. 2003

Legend:
- Dutch male survival schedule
- Bulgarian male at age 30
- Czech Republic male at age 30
- East German male at age 30
- Hungarian male at age 30
- Latvian male at age 30
- Lithuanian male at age 30
- Russian male at age 30

Age
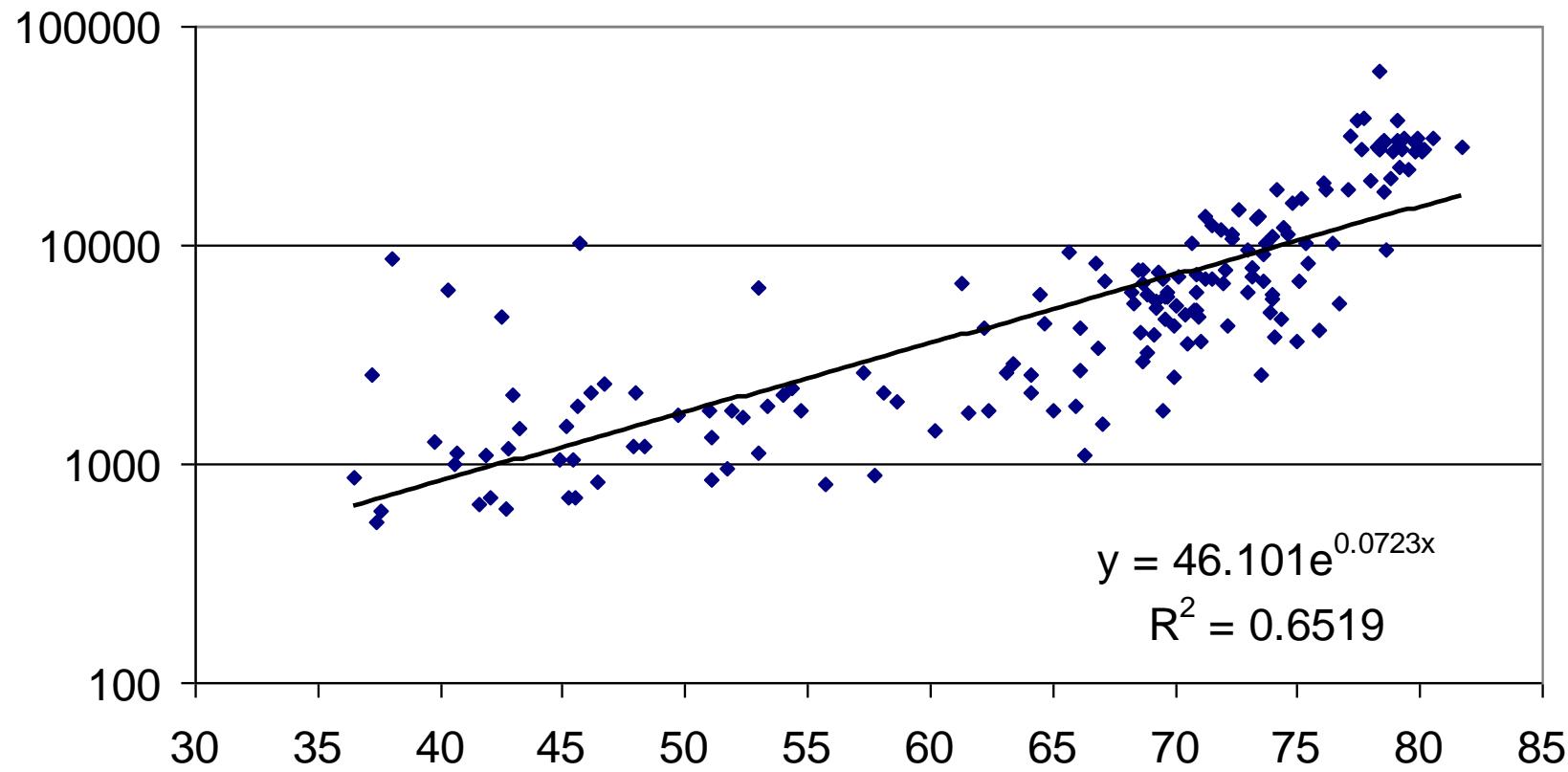
"Positive Health Momentum":
Male Mortality in Japan by birth cohort 1920-1969
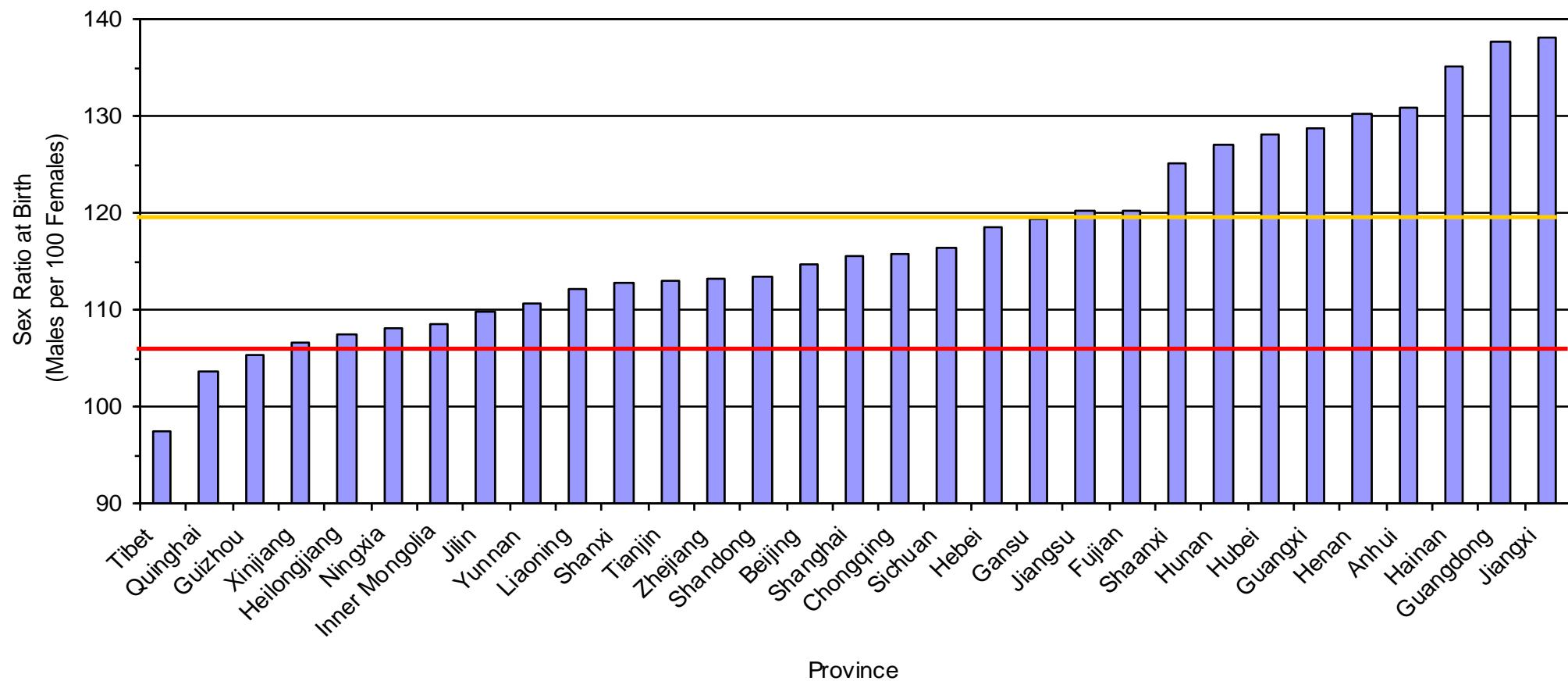
"Negative Health Momentum":
Male Mortality in Russia by birth cohorts 1920-1970

Ages

Legend:
- 1920
- 1930
- 1940
- 1950
- 1960
- 1970

Health Equals Wealth:
Worldwide LE vs. PPP Per Capita GDP, 2003

$y = 46.101e^{0.0723x}$

$R^2 = 0.6519$
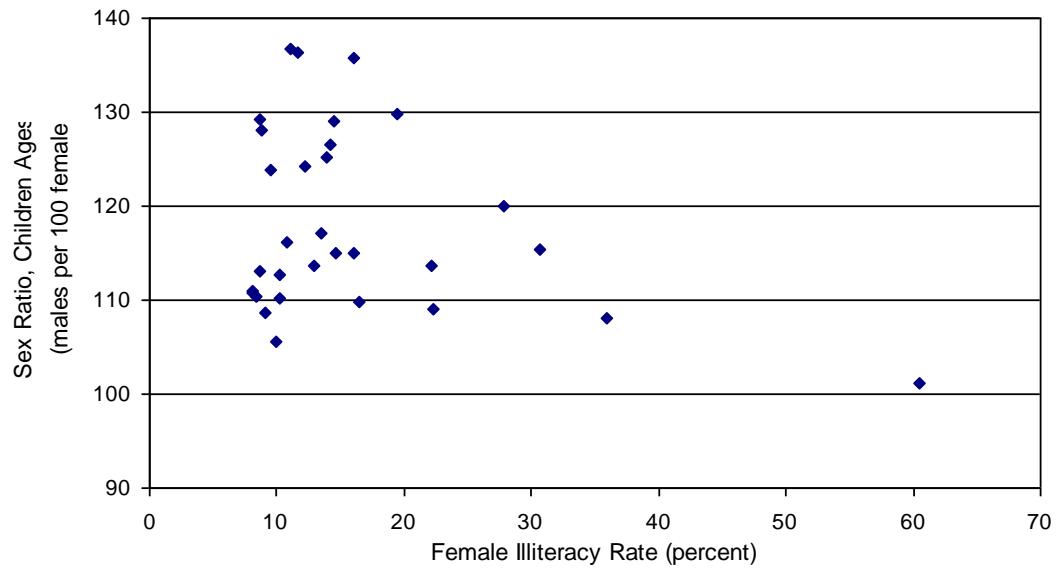
China: Sex Ratio at Birth by Province, 2000
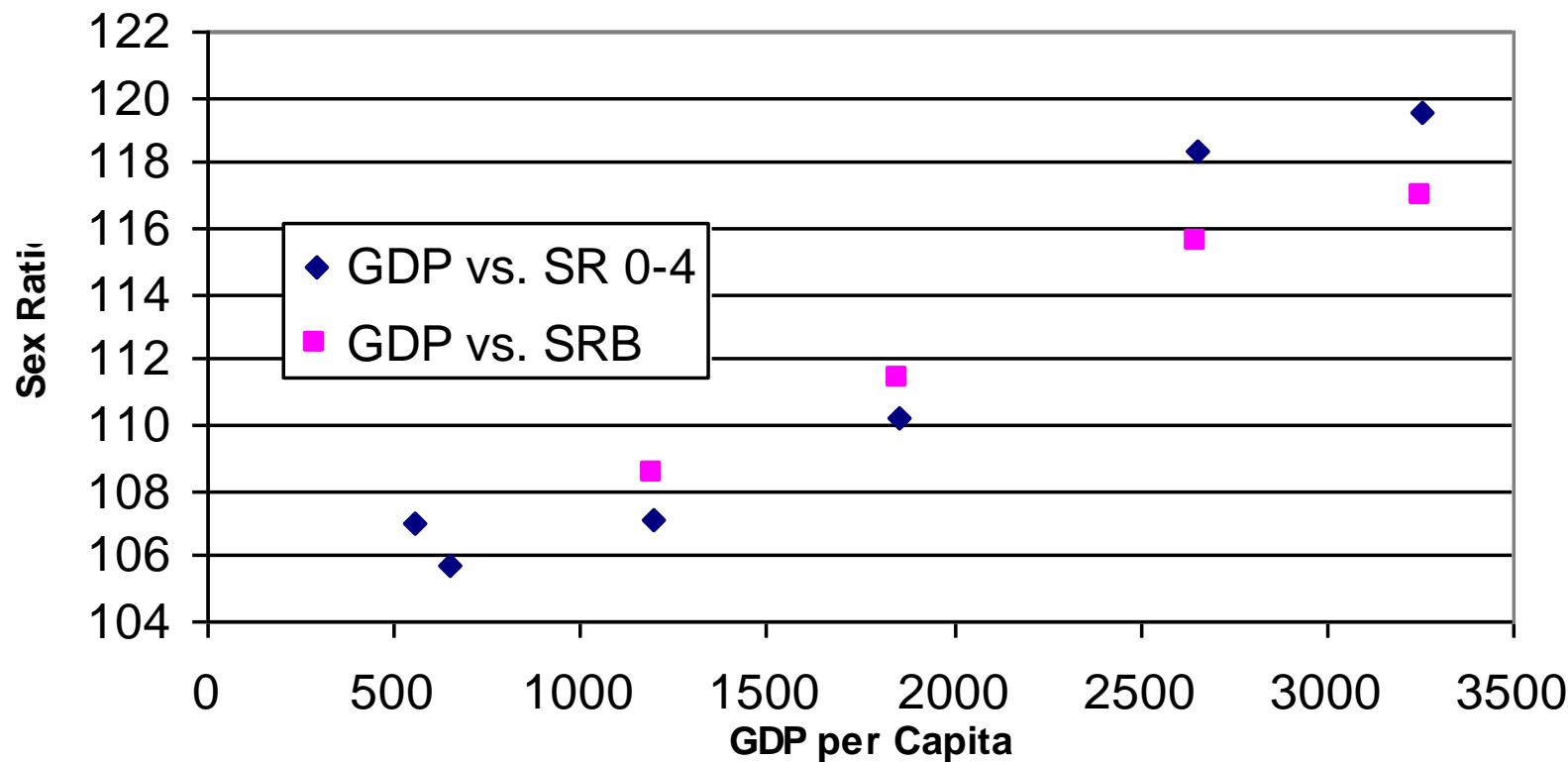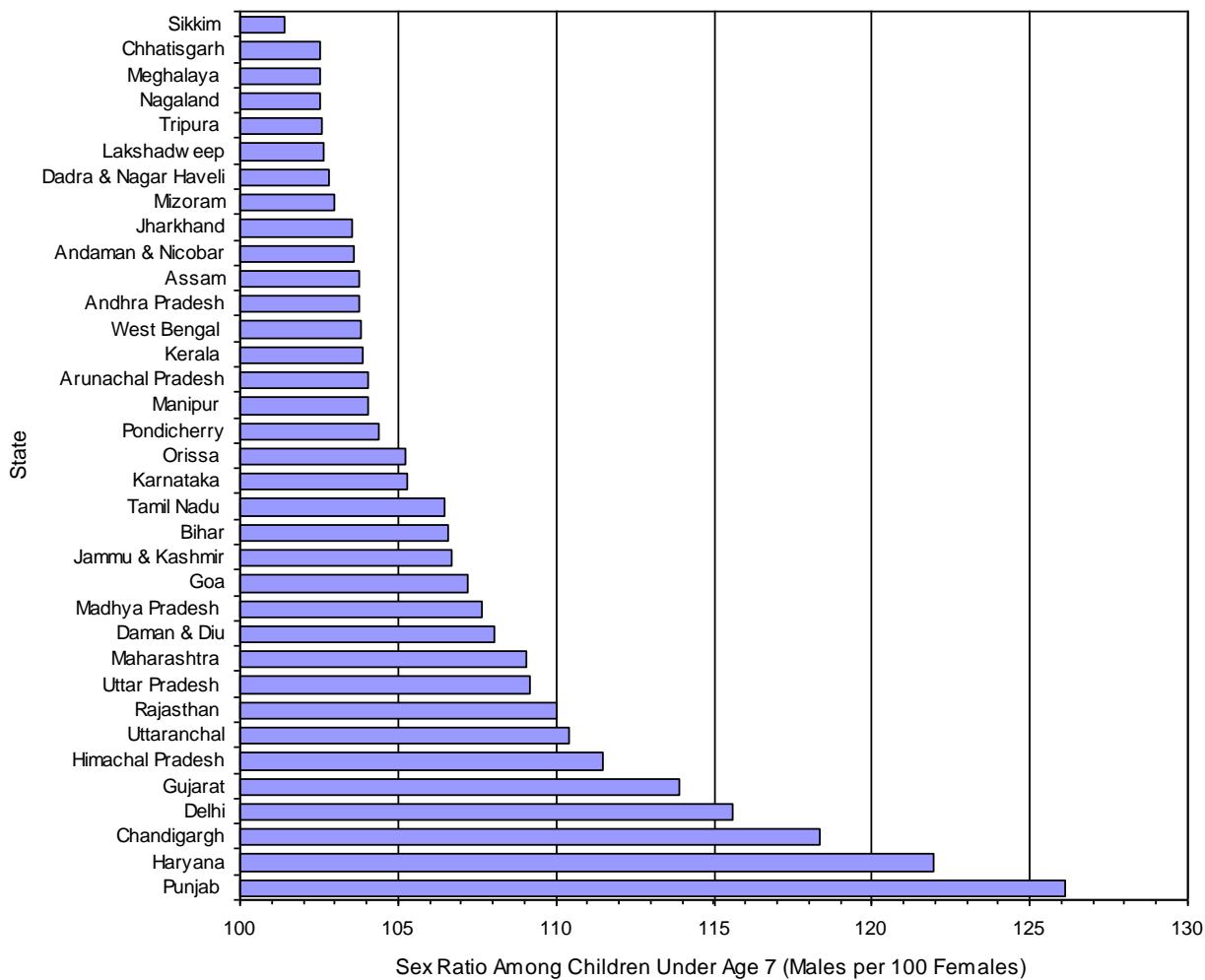
China: Sex Ratio (Children Ages 1-4) vs.

Female Illiteracy Rate by Province, 2000
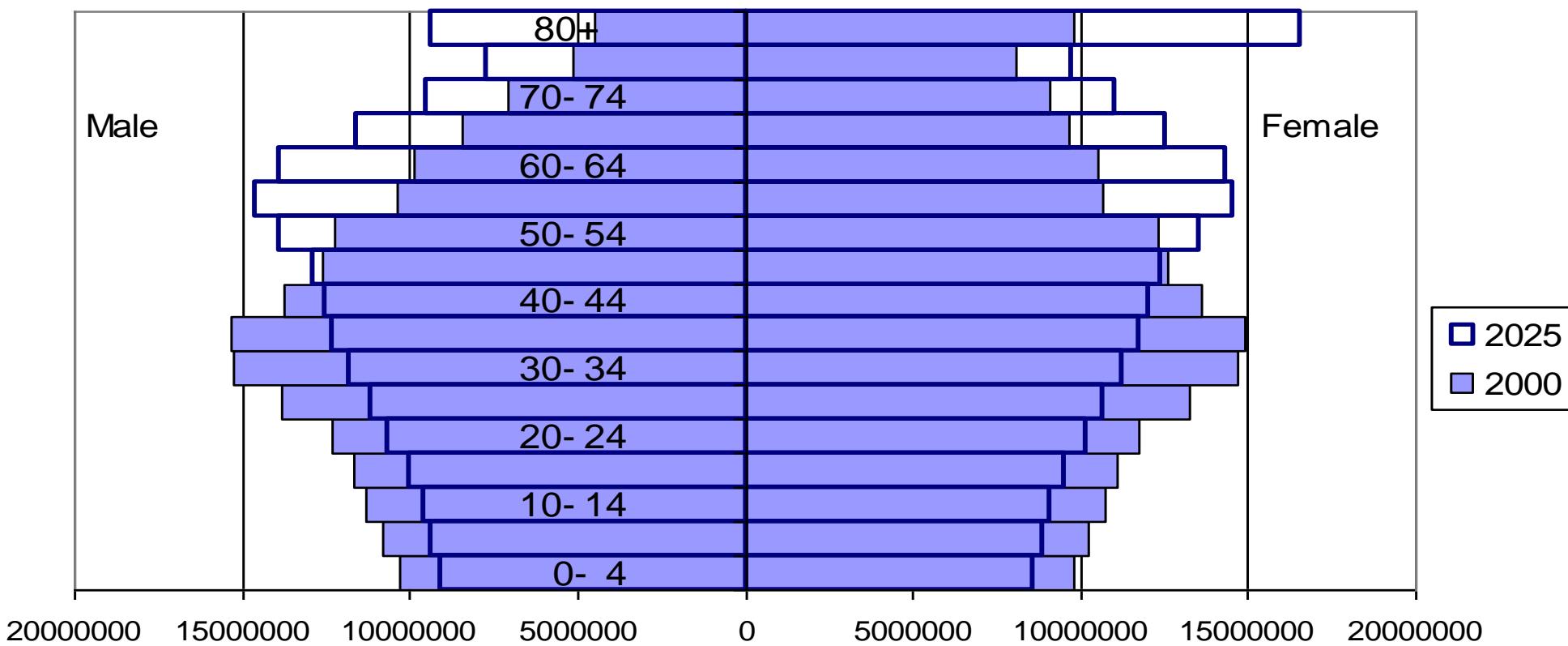
Sex Ratio at Birth vs. GDP per Capita: China, 1953-1999

# INDIA: Sex Ratio Among Children Under Age 7
By State, 2001

X-axis: Sex Ratio Among Children Under Age 7 (Males per 100 Females)

Y-axis: State

States (top to bottom):
Sikkim, Chhatisgarh, Meghalaya, Nagaland, Tripura, Lakshadweep, Dadra & Nagar Haveli, Mizoram, Jharkhand, Andaman & Nicobar, Assam, Andhra Pradesh, West Bengal, Kerala, Arunachal Pradesh, Manipur, Pondicherry, Orissa, Karnataka, Tamil Nadu, Bihar, Jammu & Kashmir, Goa, Madhya Pradesh, Daman & Diu, Maharashtra, Uttar Pradesh, Rajasthan, Uttaranchal, Himachal Pradesh, Gujarat, Delhi, Chandigargh, Haryana, Punjab

Population Structure:
EU 15, 2000 vs. 2025 (projected)

Male

Female

80+		
70- 74		
60- 64		
50- 54		
40- 44		
30- 34		
20- 24		
10- 14		
0- 4		

□ 2025
■ 2000

20000000   15000000   10000000   5000000   0   5000000   10000000   15000000   20000000

Population Structure:
USA, 2000 vs. 2025 (projected)

Age groups (top to bottom): 80+, 70- 74, 60- 64, 50- 54, 40- 44, 30- 34, 20- 24, 10- 14, 0- 4

Male — Female

Legend: 2025, 2000

X-axis: 15000000, 10000000, 5000000, 0, 5000000, 10000000, 15000000

Total Fertility Rate:
United States vs. Europe

Legend: US TFRs 2000 · Eur TFRs 2000 · EU TFRs 2000 · Russia

US "Demographic Exceptionalism": TFRs, Canada vs. USA, 1975-2001
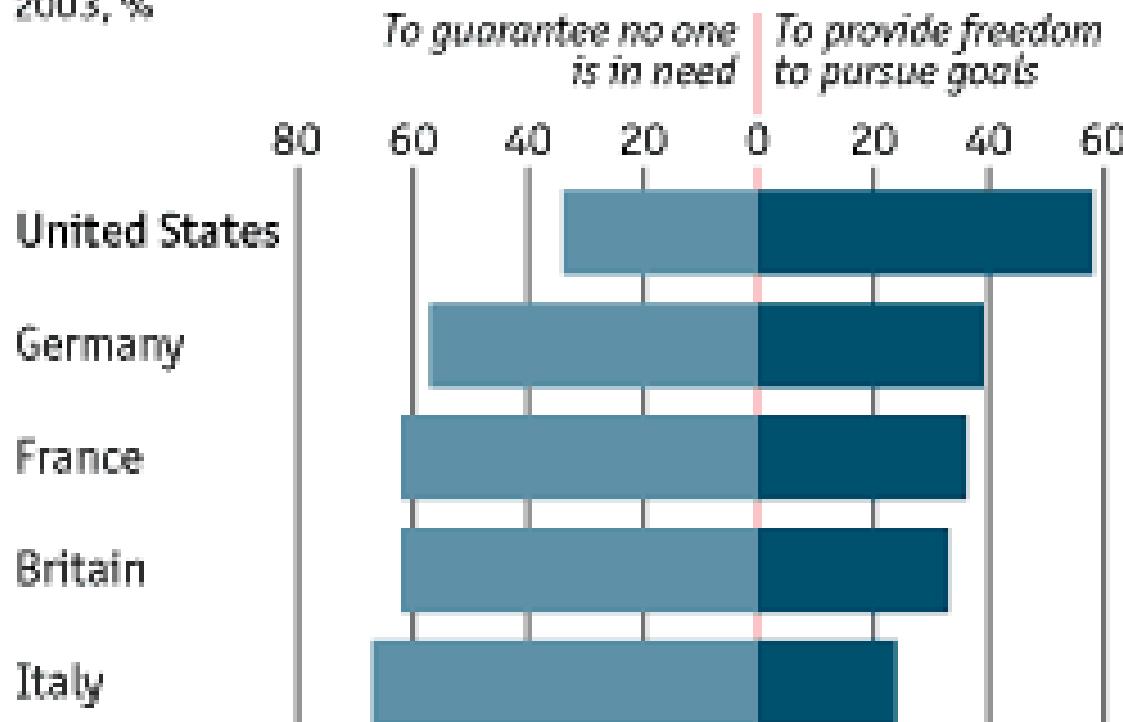
Quebec
Canada
U.S.

American Exceptionalism: Outlier Attitudes, Part I

"Which is more important for government?"
2003, %

To guarantee no one is in need | To provide freedom to pursue goals

80   60   40   20   0   20   40   60

United States
Germany
France
Britain
Italy
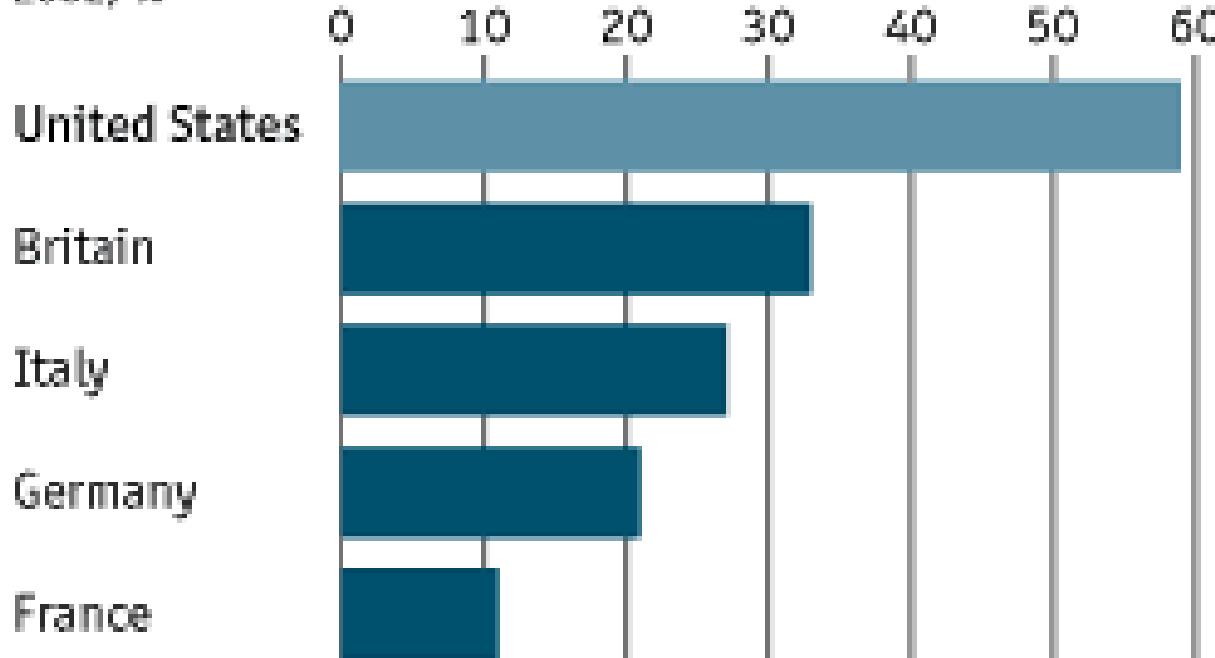
*"Are you proud to be a citizen of Italy?", % agreeing strongly
Sources: Allensbach Opinion Research Institute; National Opinion Research Centre; Pew Research Centre

American Exceptionalism: Outlier Attitudes, Part II



"Religion plays a very important role in my life"
2002, %
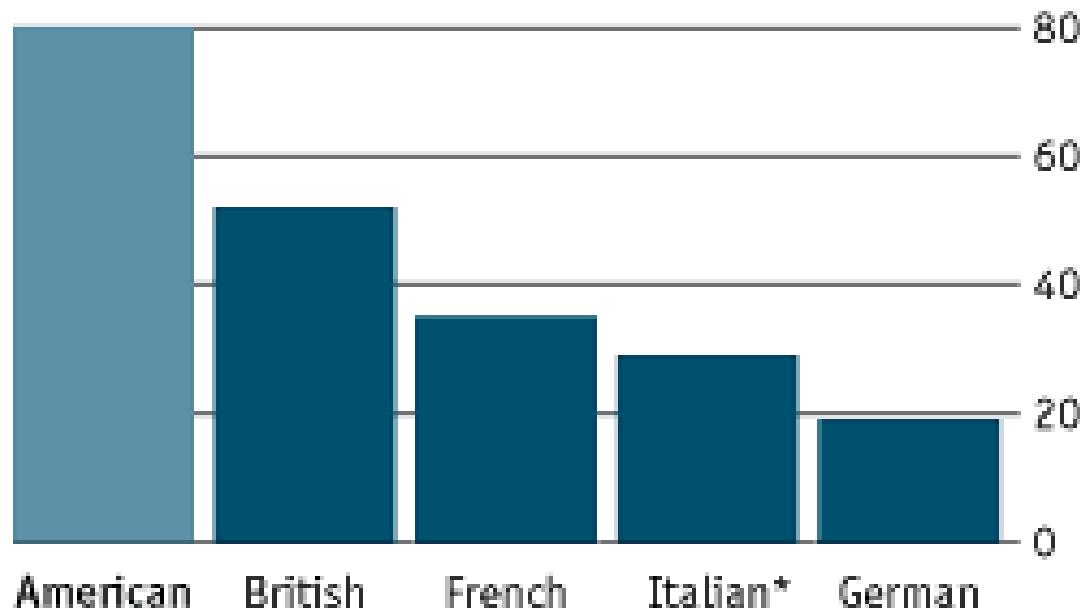
American Exceptionalism: Outlier Attitudes, Part III

Exceptional America

"Are you proud to be...?"
2001, % answering *"very proud"*

American British French Italian* German

Estimated and Projected Proportion of World Population:
United States, Western Europe, and Russia, 1950-2050