Under Funding of National Retirement systems: The Reality and Risks of Current Policies

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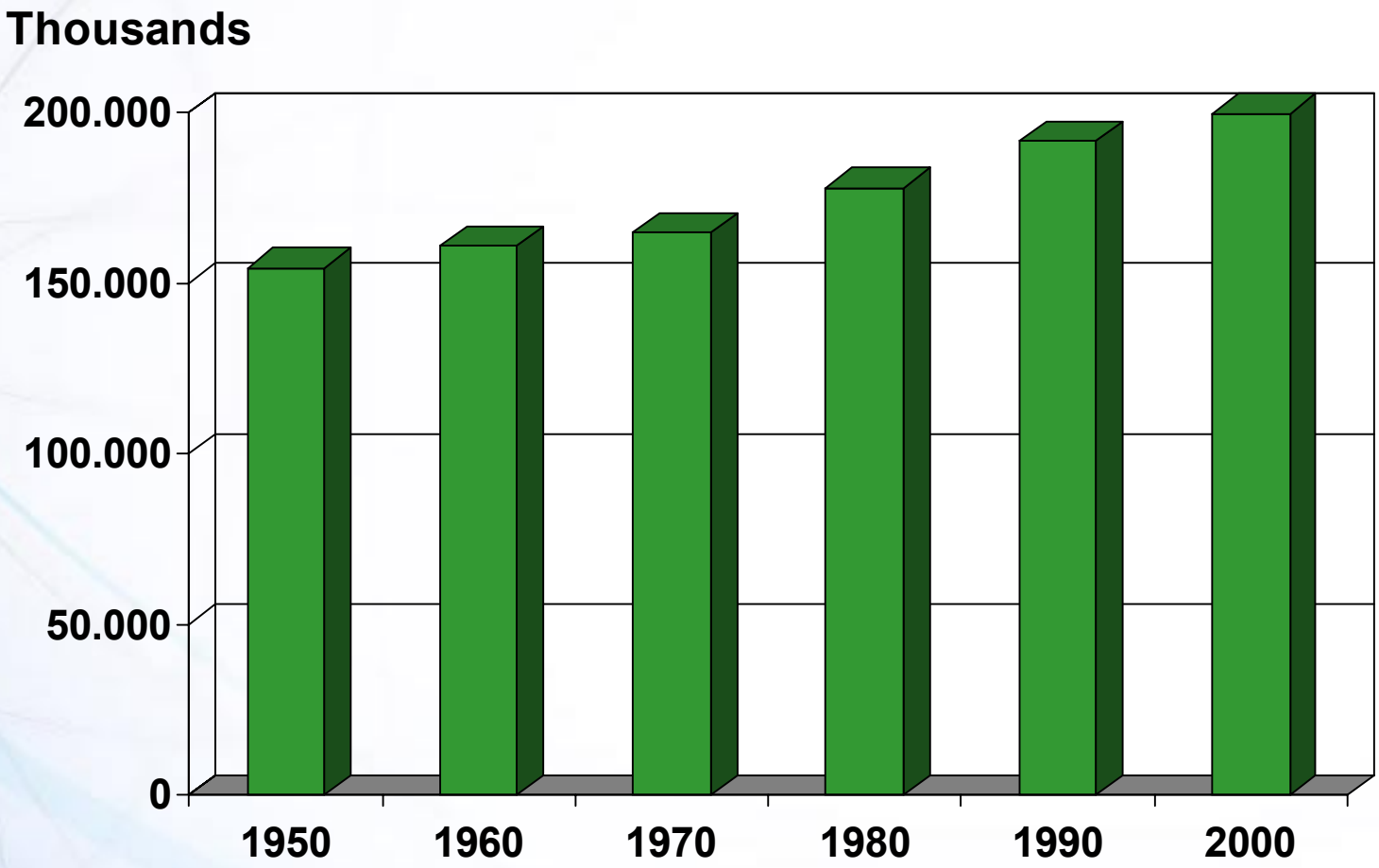
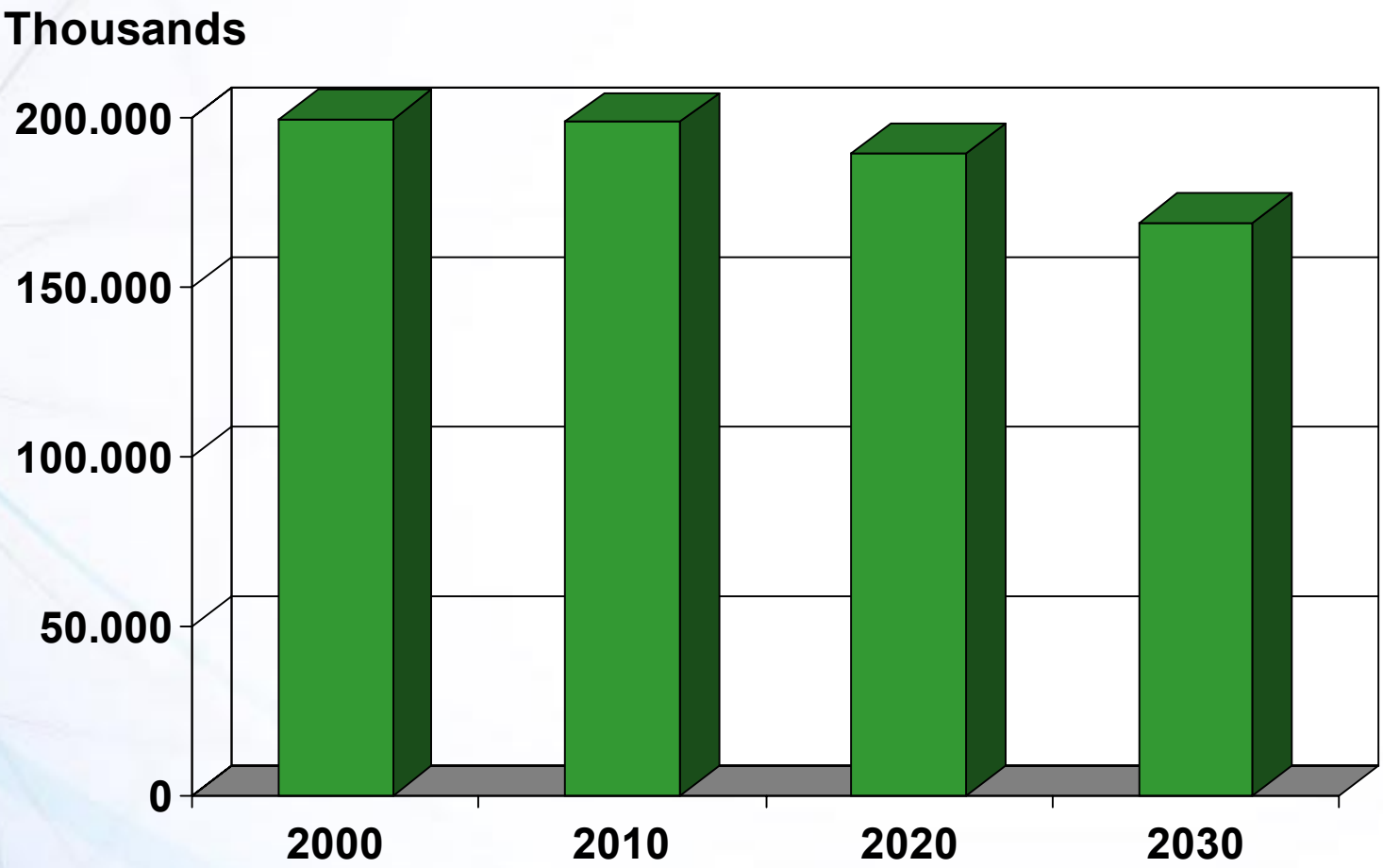
Working Age Population in the European Union 1950-2000



Source: United Nations, *World Population Prospects: The 2000 Revision.*

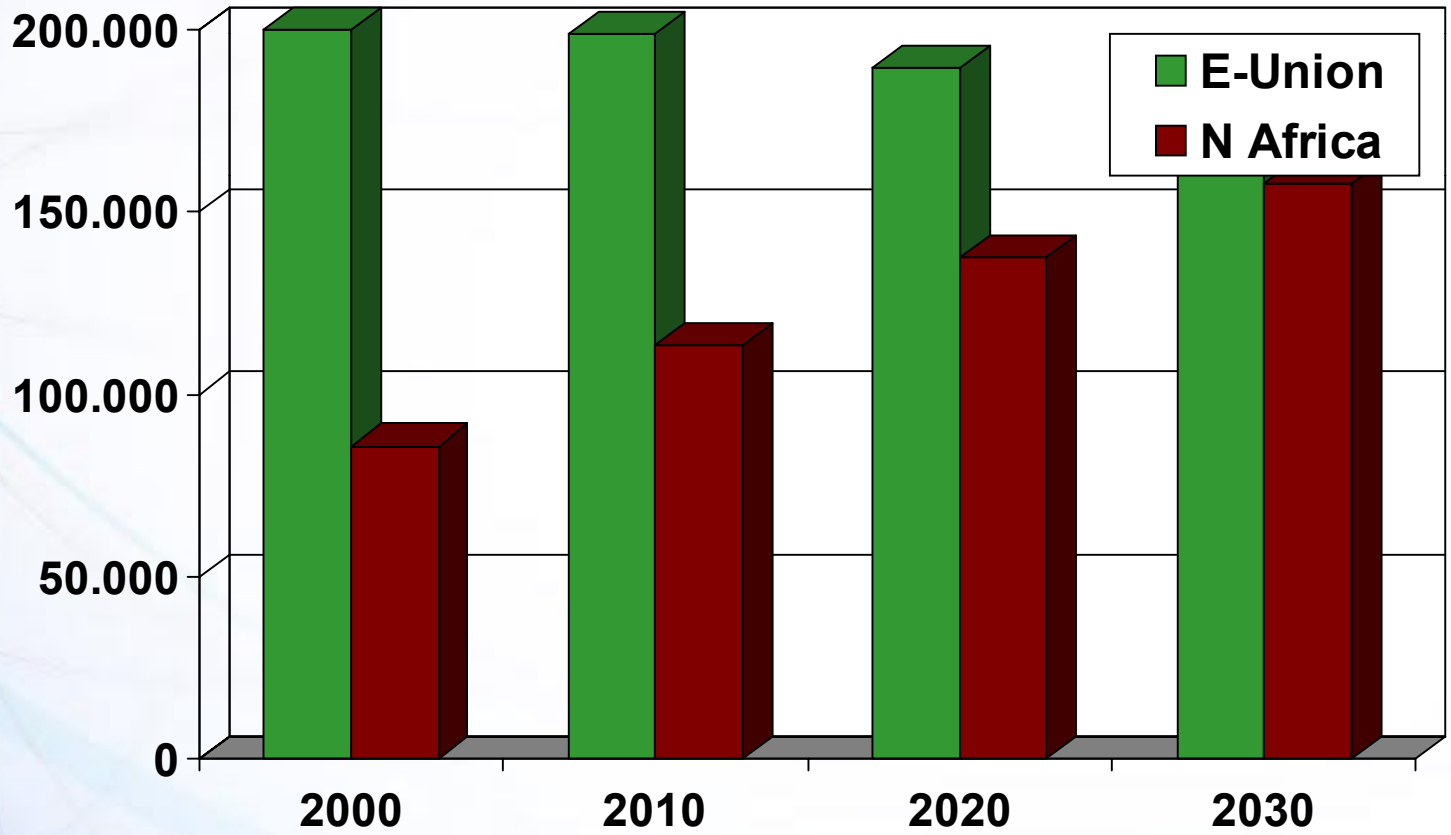
Working Age Population in the European Union 2000-2030



Source: United Nations, *World Population Prospects: The 2000 Revision.*

Working Age Population in the European Union and Northern Africa 2000-2030

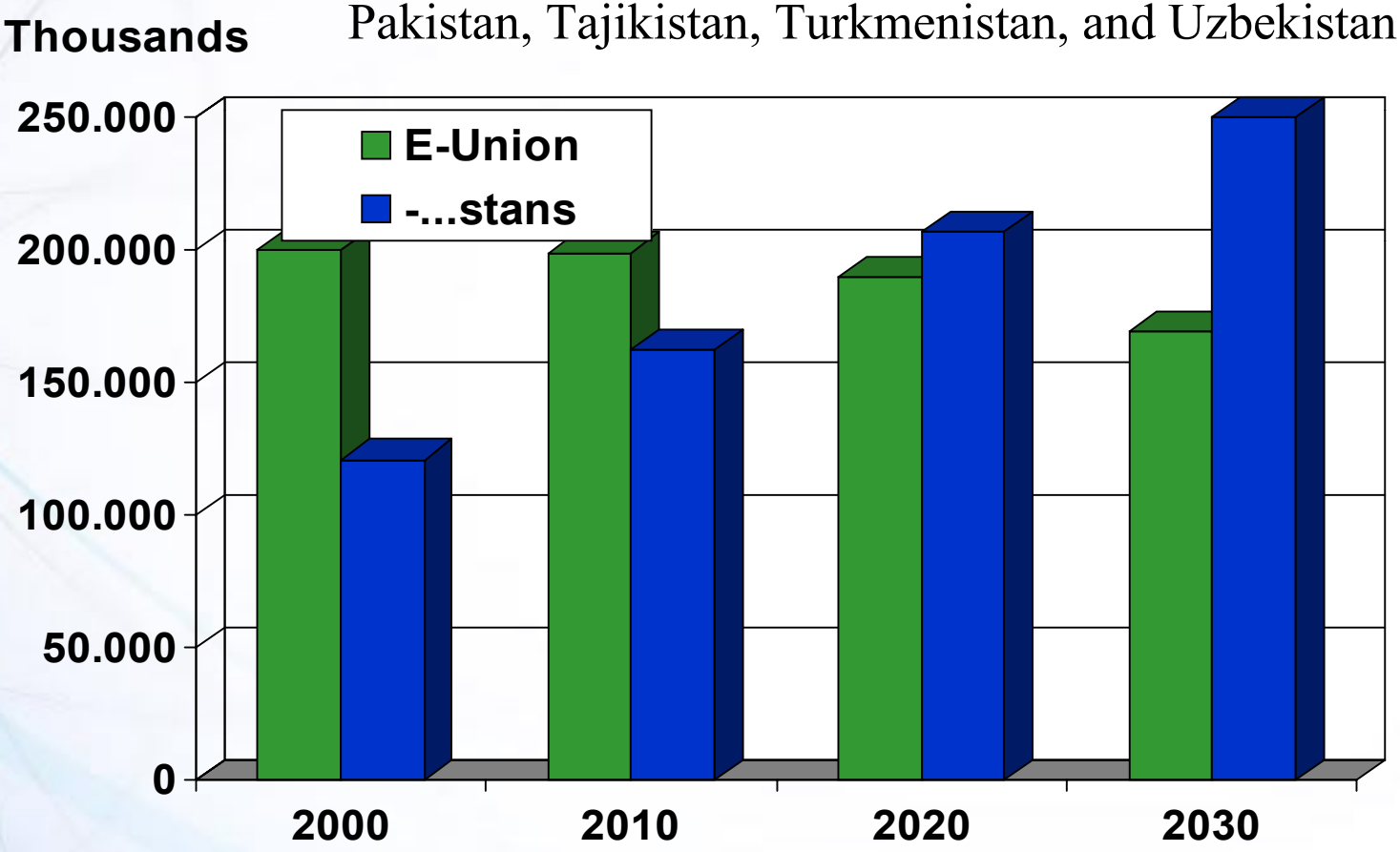
Northern Africa includes Algeria, Egypt, Libya, Morocco, Sudan, Tunisia, and Western Sahara.



Source: United Nations, *World Population Prospects: The 2000 Revision.*

Working Age Population in the European Union and the ...stans + Iran 2000-2030

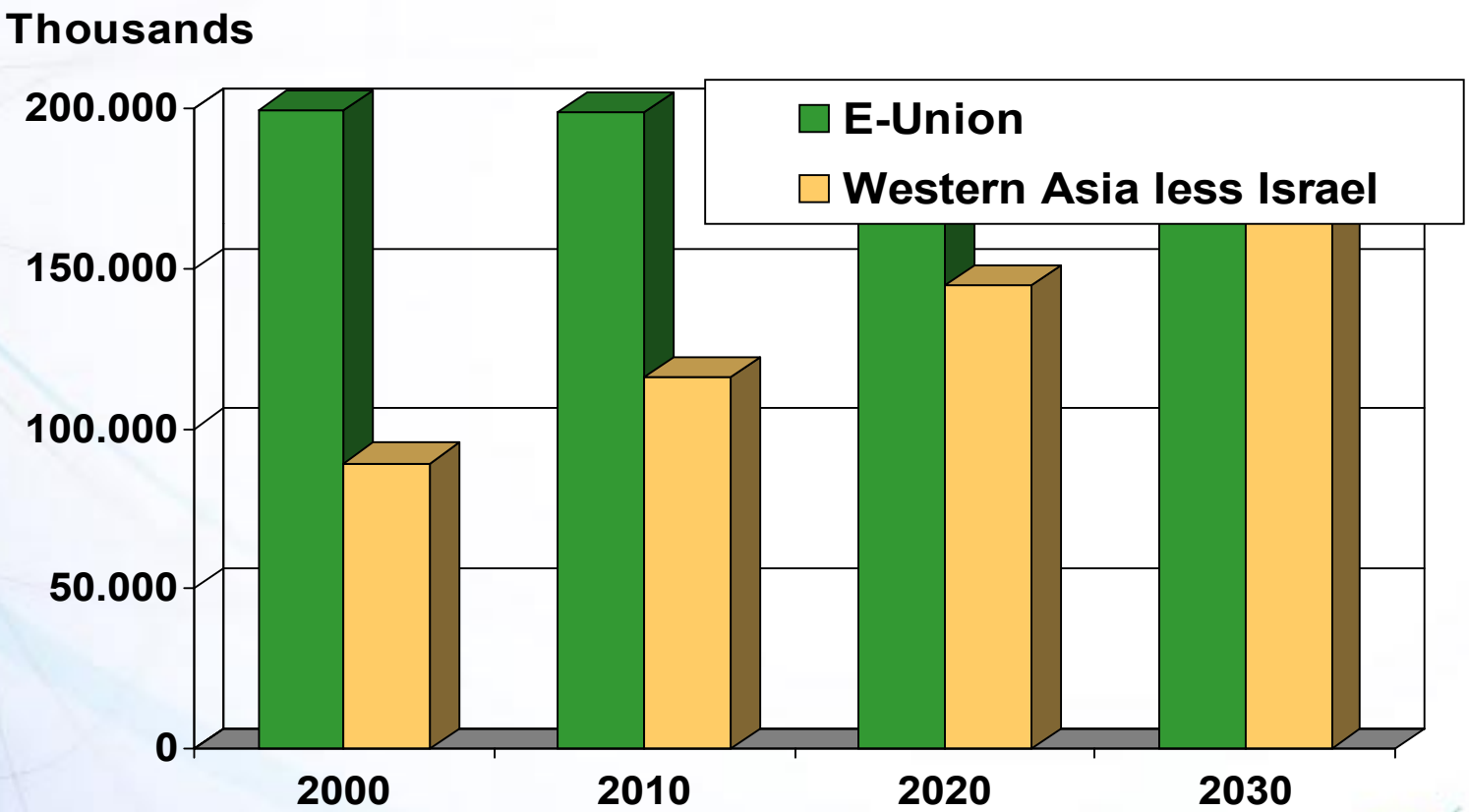
Includes Afghanistan, Iran, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, Turkmenistan, and Uzbekistan.



Source: United Nations, *World Population Prospects: The 2000 Revision.*

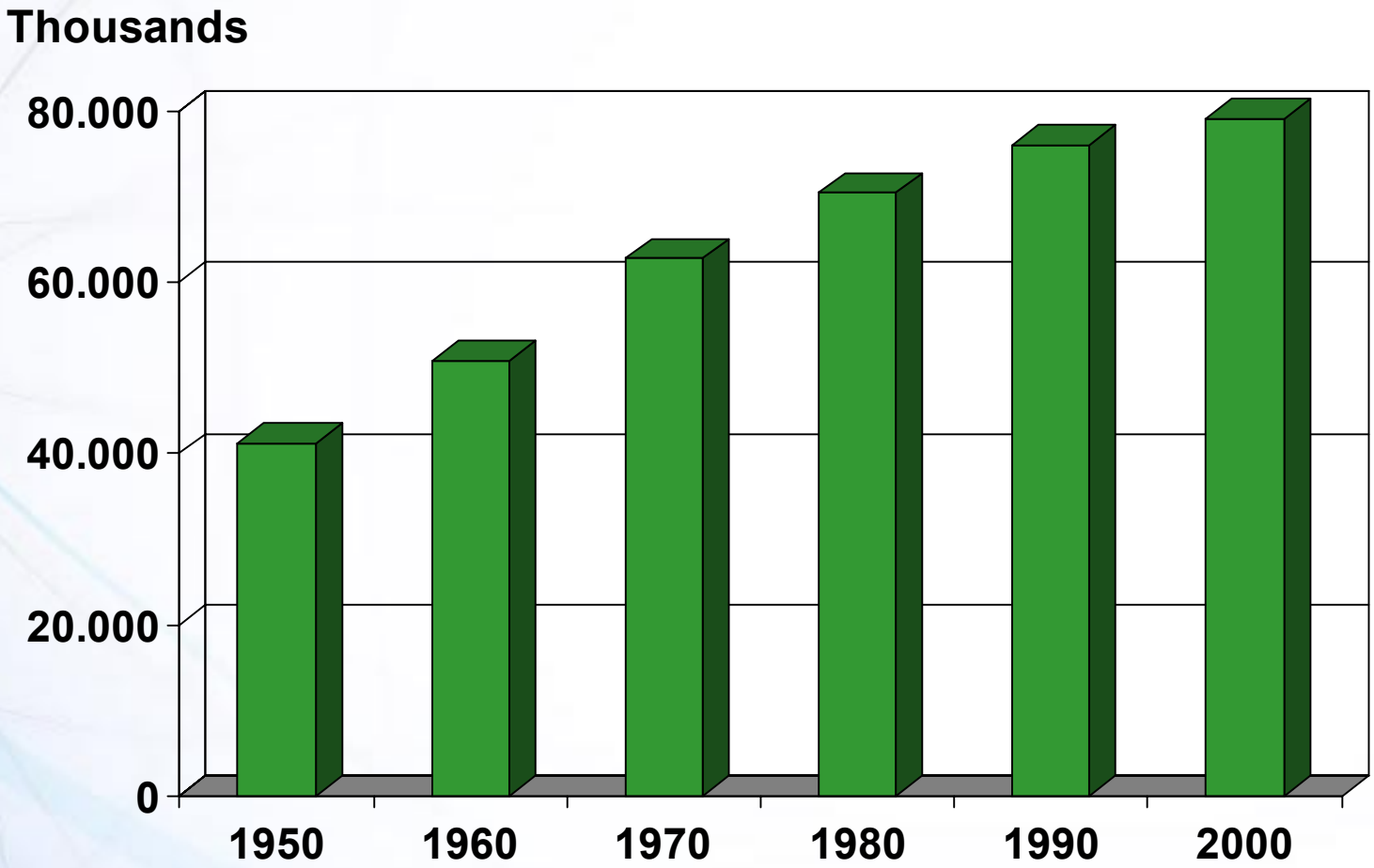
Working Age Population in the European Union and Western Asia minus Israel 2000-2030

Countries here include Armenia, Azerbaijan, Bahrain, Cyprus, Georgia Iraq, Jordan, Kuwait, Lebanon, Occupied Palestinian Territory, Oman, Qatar, Saudi Arabia, Syria, Turkey, United Arab Emirates, and Yemen.



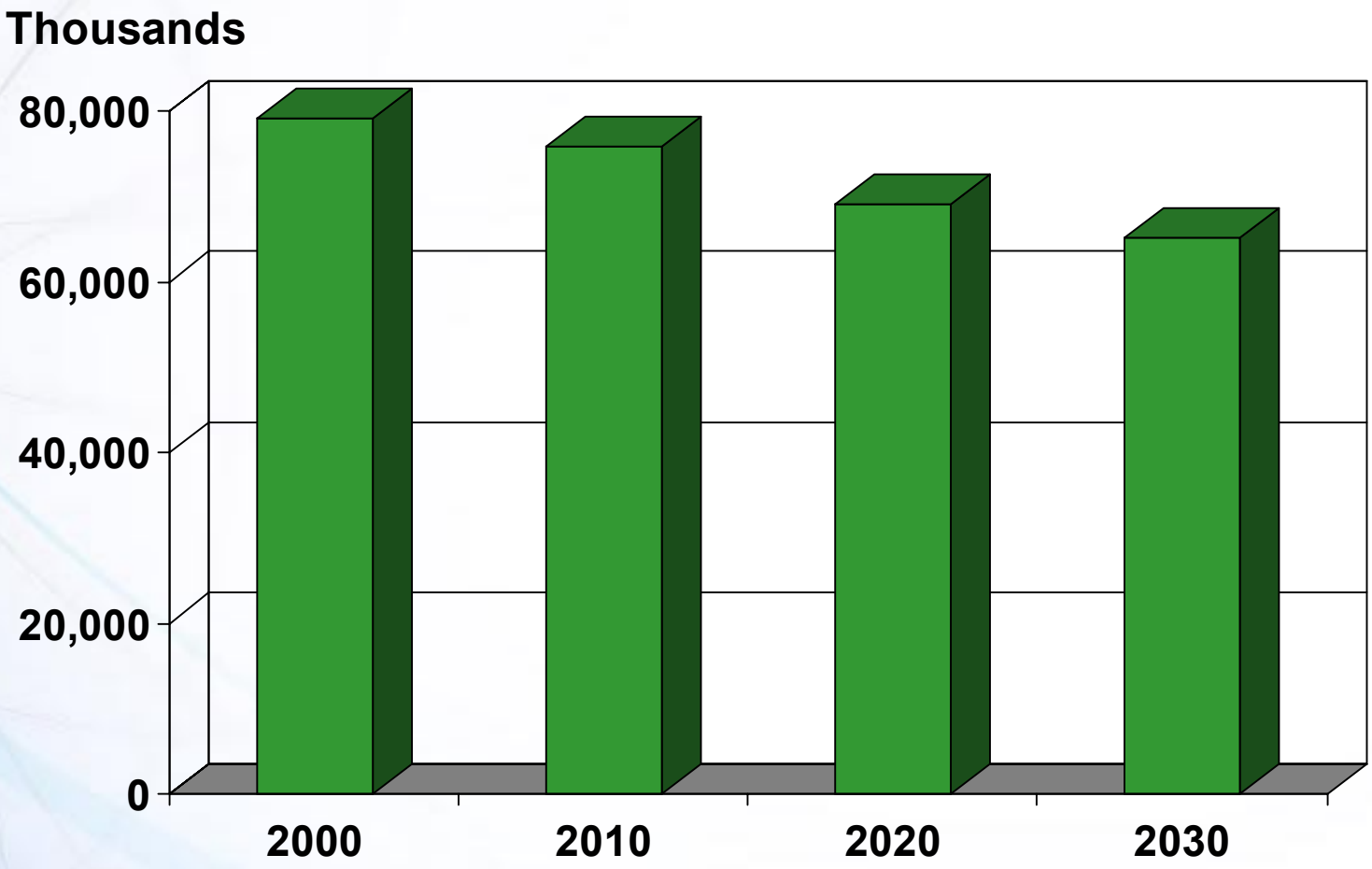
Source: United Nations, *World Population Prospects: The 2000 Revision.*

Working Age Population in Japan 1950-2000



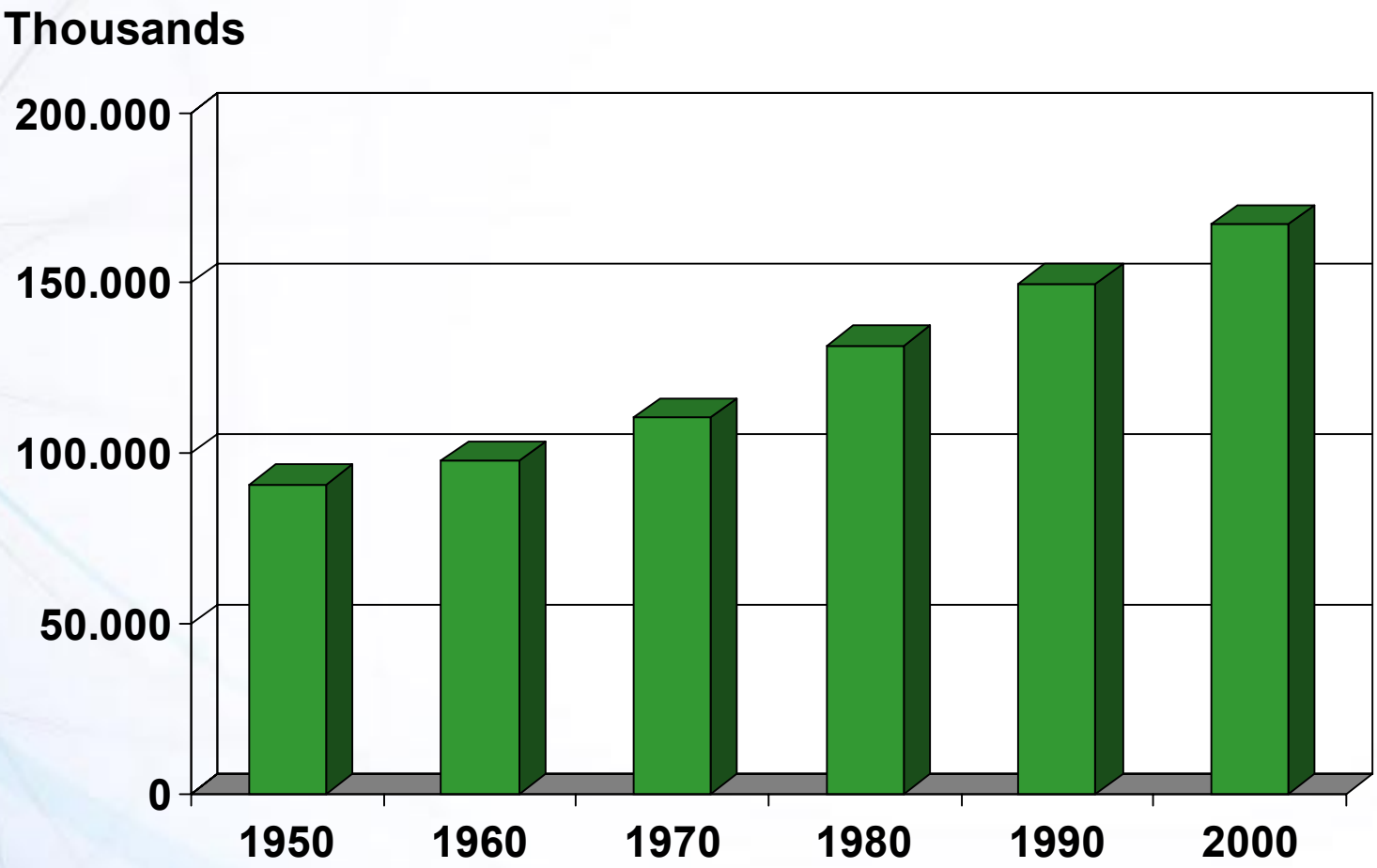
Source: United Nations, *World Population Prospects: The 2000 Revision.*

Working Age Population in Japan 2000-2030



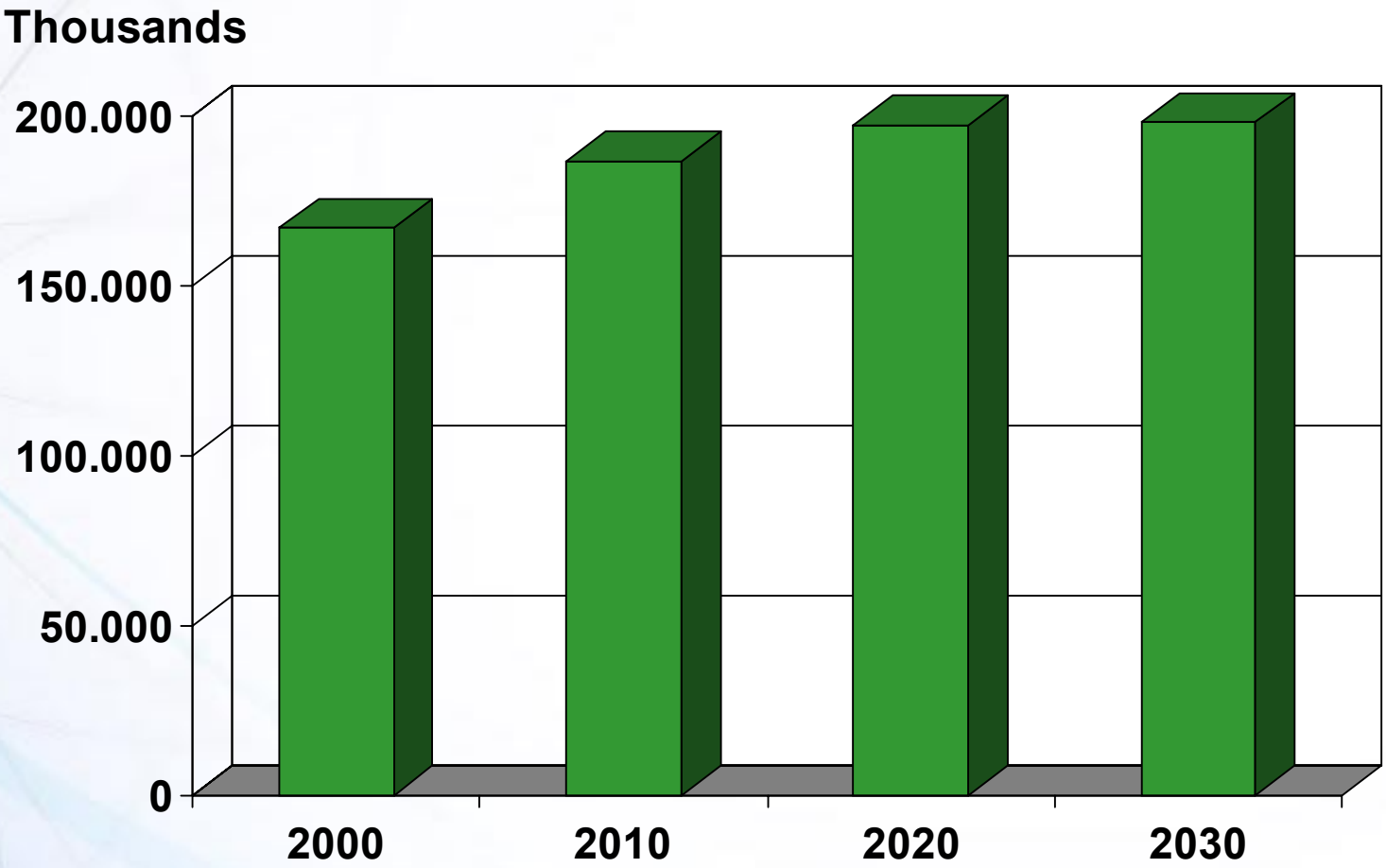
Source: United Nations, *World Population Prospects: The 2000 Revision.*

Working Age Population in the United States 1950-2000



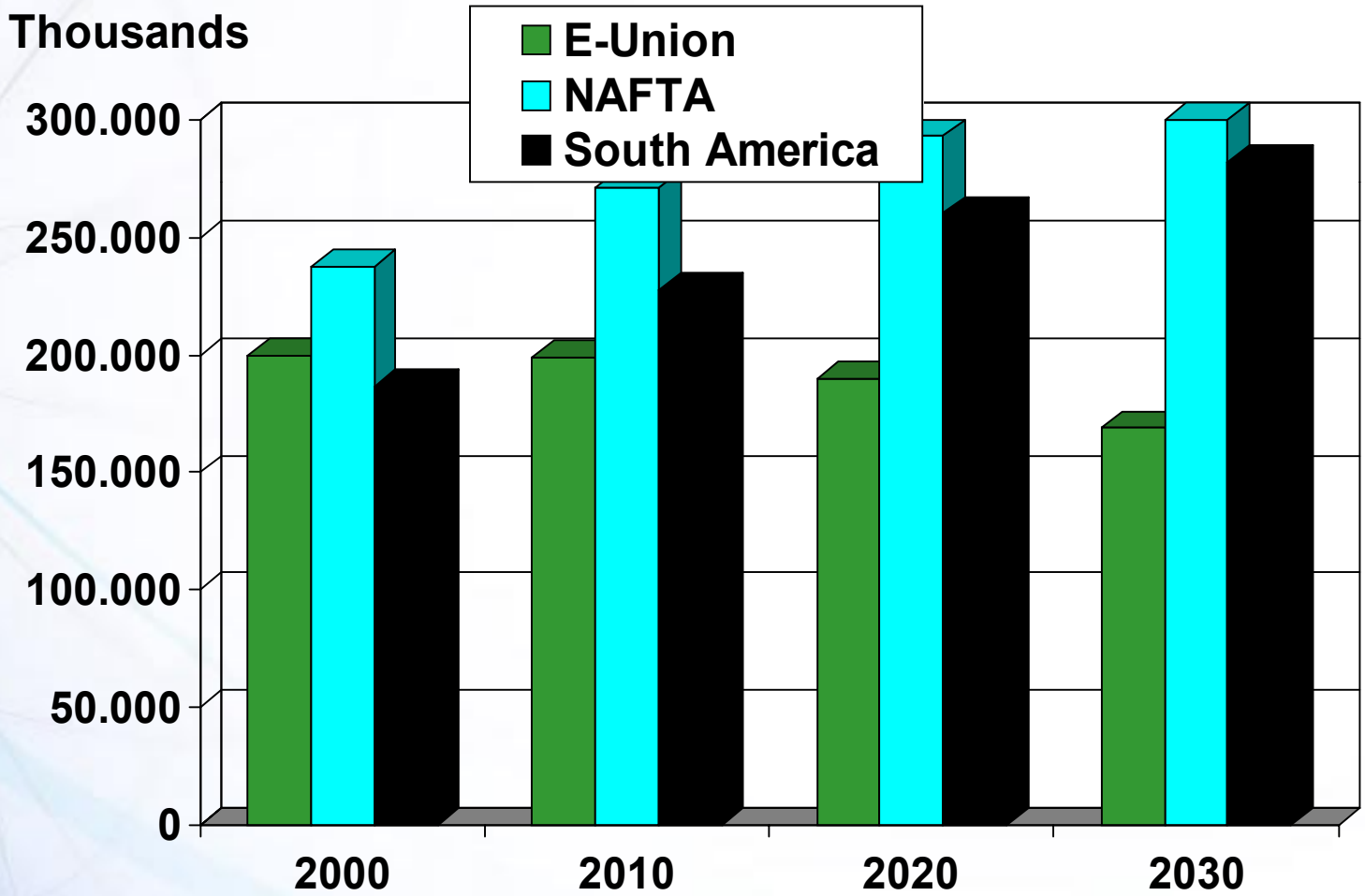
Source: United Nations, *World Population Prospects: The 2000 Revision.*

Working Age Population in the United States 2000-2030



Source: United Nations, *World Population Prospects: The 2000 Revision.*

Working Age Population in the EU, the NAFTA Countries, and South America



Source: United Nations, *World Population Prospects: The 2000 Revision.*

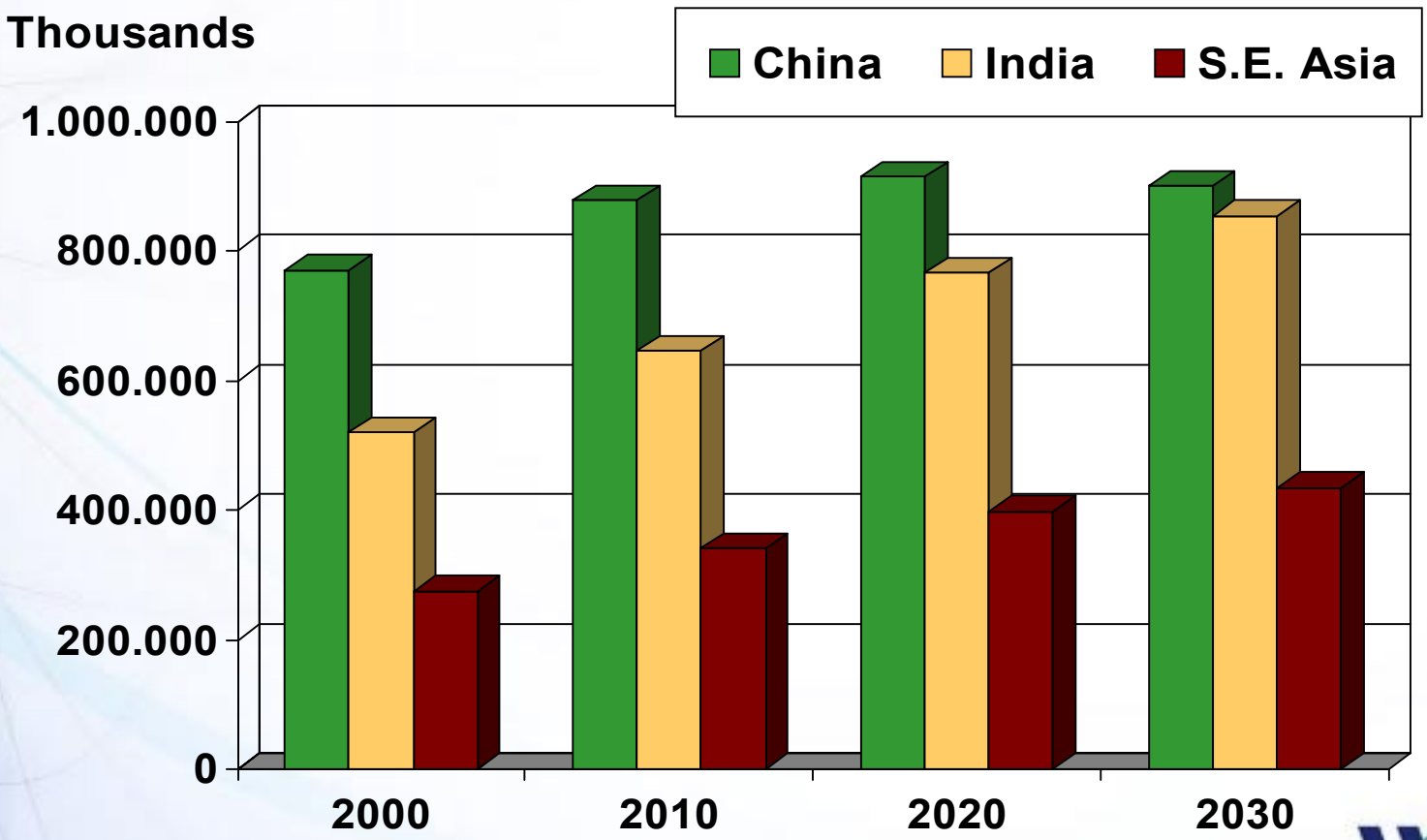
Working Age Populations of Selected Countries in Thousands for Selected Years

	2000	2010	2020	2030
United States	167,105	186,967	197,288	198,257
Canada	18,943	20,911	21,517	20,985
Mexico	51,316	63,492	74,047	80,586
Japan	79,074	75,904	68,993	65,070
France	32,071	32,628	31,424	30,173
Germany	51,228	50,046	48,685	43,189
Italy	32,416	30,924	28,636	24,194
United Kingdom	32,197	32,540	32,345	29,380
South America	186,693	227,782	259,997	281,967

Source: United Nations, *World Population Prospects: The 2000 Revision.*

Working Age Population in China, India, and Southeast Asia 2000-2030

The combined working age populations in these countries are expected to grow by more between 2000 and 2030 than the current total working age populations in the G-7 countries today.



Source: United Nations, *World Population Prospects: The 2000 Revision.*

Overview

- Growing perception about the implications of aging for developed economies over the past decade
- Recent analyses by European Commission and Organization for Economic Cooperation and Development
  - Suggest we may be making progress in stemming costs
  - But the situation is still dire
- Review the assumptions for this assessment
  - Demographic
  - Behavioral
  - Structural
  - Economic
- Are we prepared for aging and what are the risks if we are not?

Looking to the Future: The Demographic Assumptions

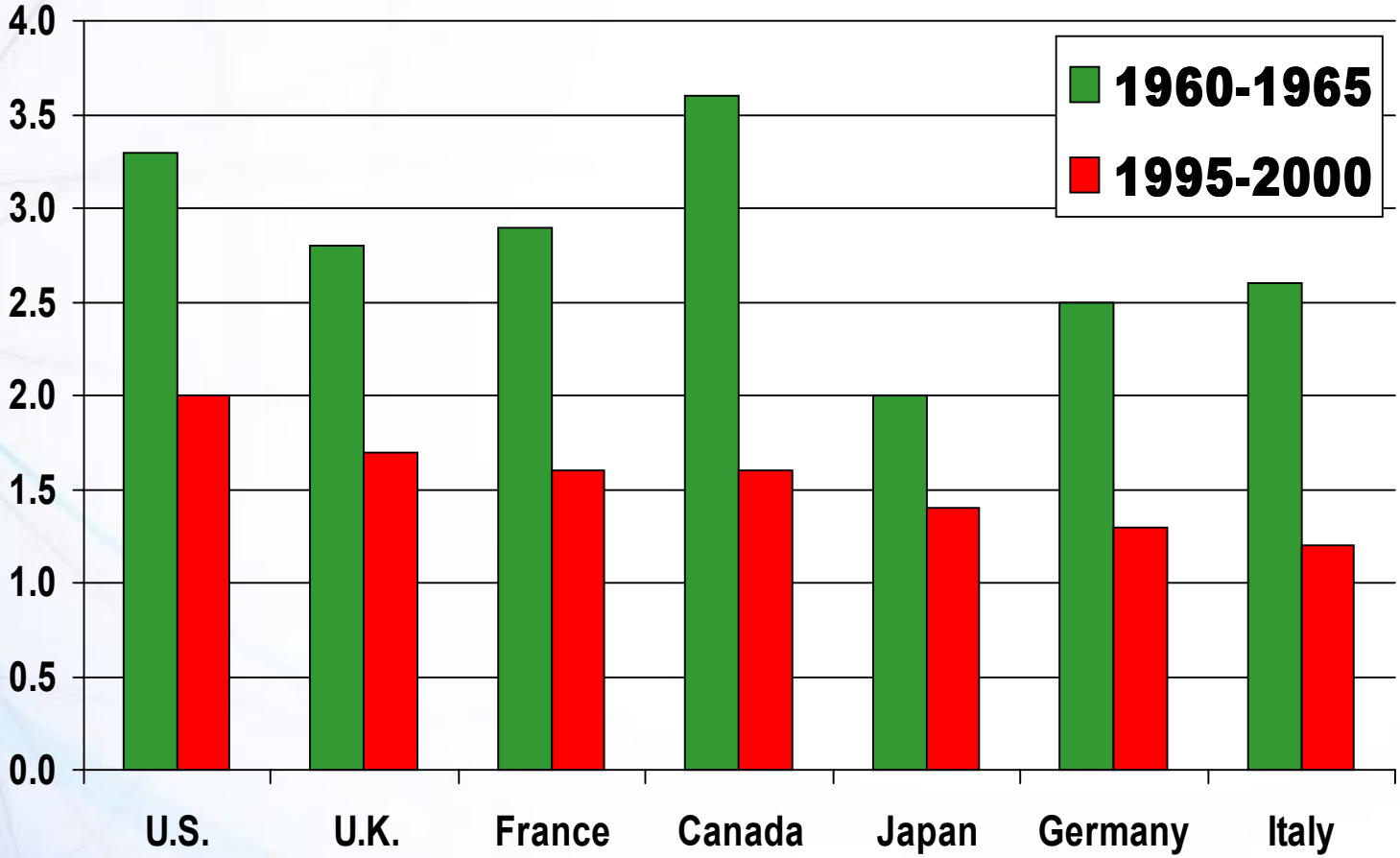
Life Expectancy

- There is a general assumption that rates of improvement in life expectancy will slow
- Reasons to support the assumption
  - Infant and juvenile mortality have largely been eliminated
  - Improvements have to come largely at advanced ages and may be increasingly hard to realize
- Reasons to question the assumption
  - Greatest rates of improvement are now coming at advanced ages
  - Biotechnology, pharmaceuticals
  - Trends

Fertility Rates (from Table 2)

	Late 1990s Rate	Percentage change	
		Late 1950s to late 1990s	Late 1990s to late 2030s
Canada	1.60	-58.95 %	- 6.25 %
France	1.73	-36.06	3.81
Germany	1.33	-42.44	13.21
Italy	1.20	-48.77	24.58
Japan	1.51	-32.07	14.10
United Kingdom	1.70	-31.80	5.82
United States	2.04	-44.87	-4.55

Fertility Has Fallen Below "Replacement" Rates in Every Developed Country



Immigration Increases Required to Offset Low Fertility Rates (Table 3)

	Birth shortfall from TFR=2.1 (thousands)	Net Immigration (thousands)	Immigrant multiple to offset TFR
Canada	197	13	15.2
France	66	4	19.9
Germany	2,231	185	12.0
Italy	1,952	118	16.6
Japan	3,008	56	54.1
United Kingdom	828	95	8.7
United States	558	1,250	0.4

Expected Changes in Labor Force Participation Rates of Women Ages 20 to 64 from 2000 Baseline (Table 5)

	2010	2030	2050
	(all values in percents)		
Canada	0.6	2.3	2.8
France	-0.1	2.2	7.3
Germany	8.9	8.7	10.0
Italy	9.6	24.4	44.9
Japan	6.5	12.5	21.8
U.K.	3.7	3.4	6.9
U.S.	2.9	7.6	5.4

Looking to the Future: The Behavioral Assumptions

Expected Changes in Labor Force Participation Rates of Men Ages 20 to 64 from 2000 Baseline (Table 5)

	2010	2030	2050
	(all values in percents)		
Canada	-2.6	-3.5	-4.3
France	-4.1	-5.3	5.0
Germany	0.8	-2.0	-1.4
Italy	4.1	2.6	2.9
Japan	-1.5	-2.0	-1.4
U.K.	-1.7	-2.1	-2.3
U.S.	-0.6	-1.6	-1.8

Labor Force Participation of Women Ages 55 to 64 (Table 6)

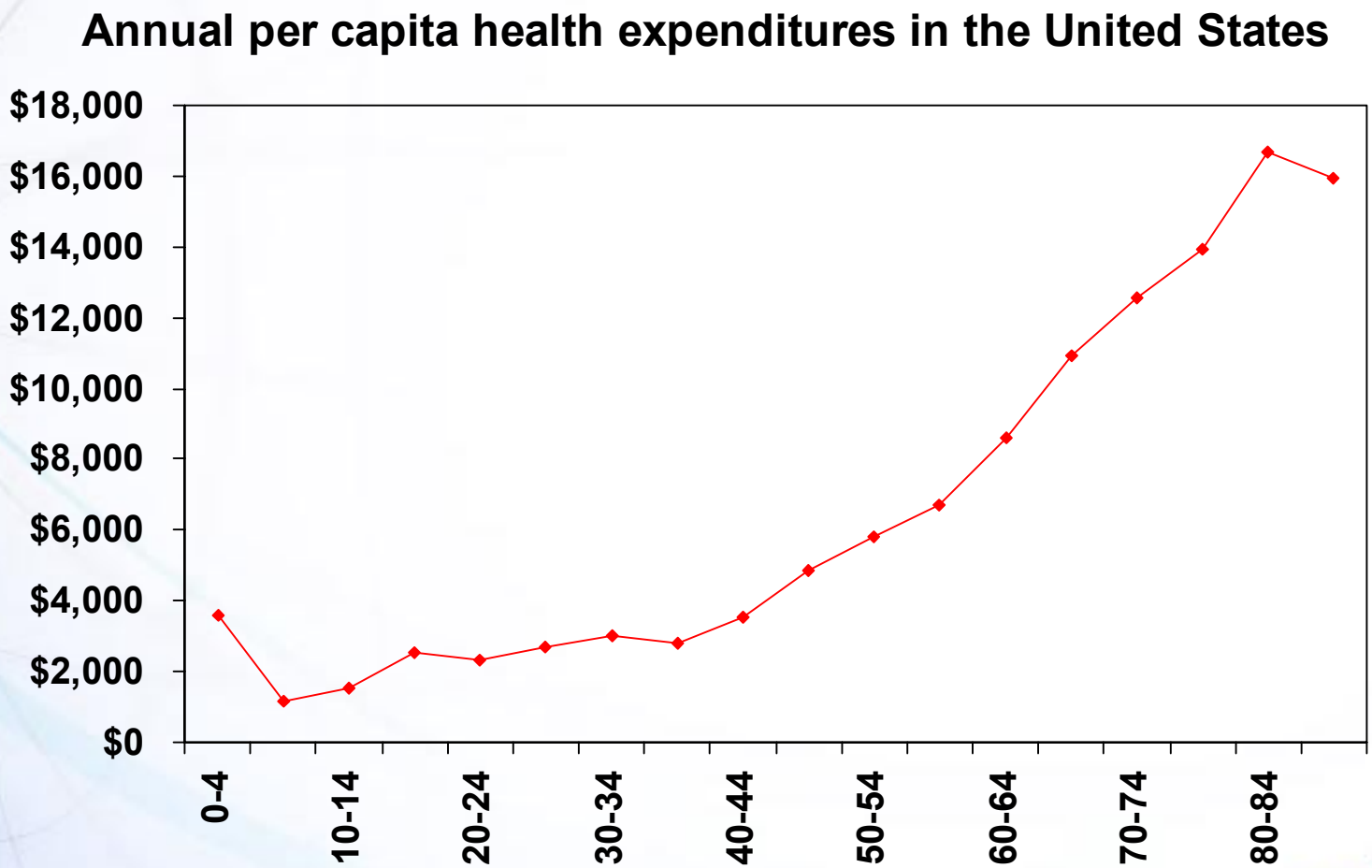
	2000	2010	2030	2050
Canada	38.8 %	40.6 %	48.3 %	51.2 %
France	29.5	28.5	31.5	34.9
Germany	37.0	46.0	48.9	51.4
Italy	17.4	26.6	33.4	44.5
Japan	47.1	47.1	57.4	70.0
U.K.	40.0	40.5	43.0	51.9
U.S.	52.0	57.4	58.6	58.1

Looking to the Future: The Structural Assumptions

Growth of Pension Benefits Relative to Wages or Income Basis

- Systems tie benefits to the growth in wages or incomes
- Financing imbalances are purely driven by demographics
- Except during start-up phases with longer careers
  - Increase in the wage or earnings base mimics start-up
  - Growing labor force participation of women does as well
- May not be a problem for pensions, but then again…
- Pensions are a small part of the picture

Health Care Costs Are Driven by Price and Quantity of Services Delivered



Health Care Costs Are Driven by Price and Quantity of Services Delivered (Table 7)

- In most countries health care price inflation has consistently outstripped general price inflation
- In many countries more intensive delivery of services has increased per capita health consumption over and above inflation

Health care expenditures as a percent of GDP

	1970	Late 1990s
Canada	7.0 %	9.3 %
France	5.7	9.4
Germany	6.3	10.3
Italy	5.1	8.2
Japan	4.6	7.4
United Kingdom	4.5	6.9
United States	6.9	12.9

Health Care Projections

- Assume per capita utilization, controlling for age, will increase at the rate of growth in GDP per capita or GDP per worker
- Argues the projections may exaggerate health costs because current age pattern will not persist into the future
  - Health expenditures tend to be concentrated toward the end of life
  - We each are allotted only one death
- Acknowledges the projections may understate health costs because method ignores price inflation and increasing intensity in the delivery of services

The U.S. Experience with Medicare Benefits for the Elderly and Disabled

- Have always used assumption that benefits per capita would grow at the rate of growth in wages or GDP per capita
- Consistent history of benefit increases exceeding assumptions
- Technical panel in 2000 recommended using an assumption that per capita benefits would grow at rate of GDP per capita plus one (1) percentage point
- Revised cost projections
  - in 2030 projection rose from 4.36 to 4.51 percent of GDP
  - in 2050 projection rose from 4.79 to 6.01 percent of GDP
  - in 2075 projection rose from 5.28 to 8.49 percent of GDP

Looking to the Future: The Economic Assumptions

Growth in Labor Productivity Rates for Selected Periods (Table 8)

	1970s	1980s	1990s	2000-2010
Canada	0.85 %	1.11 %	1.37 %	1.48
France	2.72	2.07	1.28	1.61
Germany	2.56	1.70	-0.40	1.75
Italy	2.55	1.60	1.57	2.07
Japan	3.56	2.84	1.04	1.40
U.K.	1.75	1.97	1.88	1.99
U.S.	1.57	1.42	1.59	1.95

The Projections of Cost Growth in Aging Programs as Percent of GDP (Table 1)

	Pensions		Health		Combined	
	2000	2050	2000	2050	2000	2050
Canada	5.1 %	10.9 %	6.3 %	10.5 %	11.4 %	21.4 %
France	12.1	15.9	5.7	na	17.8	na
Germany	11.8	16.8	6.3	na	18.1	na
Italy	14.2	13.9	5.1	na	19.3	na
Japan	7.9	8.5	5.8	8.2	13.7	16.7
U.K.	4.3	3.6	5.6	7.3	9.9	10.9
U.S.	4.4	6.2	2.6	7.0	7.0	13.2

The Projections of Cost Growth in Aging Programs as Percent of GDP (Table 1)

	Pensions		Health		Combined	
	2000	2050	2000	2050	2000	2050
Australia	3.0 %	4.6 %	6.8 %	13.0 %	9.8 %	17.6 %
Belgium	8.8	12.1	6.2	9.2	15.0	21.3
Denmark	6.1	8.8	6.6	9.3	12.7	18.1
Finland	8.1	12.9	8.1	11.9	16.2	24.8
Netherlands	5.2	10.0	7.2	12.0	12.4	22.0
New Zealand	4.8	10.5	6.7	10.7	11.5	21.2
Sweden	9.2	10.8	8.1	11.3	17.3	22.1

Factors Affecting Costs of Aging Programs Over Time

- Old-age dependency ratio
  - May be underestimating if longevity improves at prior rates
  - May be underestimating if fertility rate declines are not reversed
  - If we are right costs will be higher than projected

Factors Affecting Costs of Aging Programs Over Time

- Old-age dependency ratio
- Employment ratio (i.e., labor force participation rate)
  - May be overestimating if women do not enter at higher rate (which may also complicate fertility assumption realization)
  - May be overestimating if older folks do not change retirement patterns
  - If we are right costs will be higher than projected

Factors Affecting Costs of Aging Programs Over Time

- Old-age dependency ratio
- Employment ratio (i.e., labor force participation rate)
- Benefit ratio-- ratio of benefits to financing base
  - May be underestimating if not accounting for growing participation of women on pensions
  - Almost certainly underestimating the effects of aging on health costs
  - If we are right costs will be higher than projected

Factors Affecting Costs of Aging Programs Over Time

- Old-age dependency ratio
- Employment ratio (i.e., labor force participation rate)
- Benefit ratio-- ratio of benefits to financing base
- Eligibility ratio (portion of elderly population receiving benefits)
  - May be overestimating based on labor force participation of women assumptions
  - Has some relevance for pensions but almost none for health benefits
  - If we are right costs will be lower than projected but not nearly enough to offset the other biases

Looking to the Future

Political Risks in Current Retirement Systems Given Evolving Demographics

- The underlying assumption is that people vote their self interest
  - May be an over simplification
  - Consistent with James M. Buchanan's theories of public choice
  - When it comes to supporting social insurance programs it is largely consistent with voter behavior
- Voters compare present value of future taxes to present value of current benefits at each voting date
  - Assume that underfunded systems will constrain benefits to current contribution rates
  - Winners vote for the current system
  - Losers vote against it

Value of Future Pension Benefits to Future Contributions in 2000 by Age

	30	40	50
Canada	0.594	0.868	1.918
France	0.436	0.696	1.526
Germany	0.381	0.607	1.436
Italy	0.279	0.482	1.126
Japan	0.463	0.771	1.581
UK	0.459	0.731	1.599
US	0.627	0.969	2.101

Value of Future Pension Benefits to Future Contributions in 2020 by Age

	30	40	50
Canada	0.599	0.912	1.681
France	0.490	0.709	1.393
Germany	0.421	0.619	1.236
Italy	0.297	0.428	0.843
Japan	0.515	0.757	1.433
UK	0.515	0.797	1.489
US	0.721	1.040	2.040

Breakeven Ages Where PV of Future Benefits = PV of Future Contributions

	2000	2010	2020	2030
Canada	42.1	42.2	41.6	41.7
France	45.5	45.9	45.3	45.5
Germany	46.3	47.3	46.9	46.3
Italy	48.5	50.5	51.3	49.9
Japan	44.0	44.7	45.1	44.4
UK	44.7	45.4	44.2	44.1
US	40.5	39.8	39.0	38.3

Share of Voters over Breakeven Ages at Historical Voting Rates by Age

	2000	2010	2020	2030
Canada	54.4	60.9	63.6	65.9
France	53.7	56.4	62.1	64.0
Germany	50.0	53.3	59.6	62.9
Italy	44.0	46.2	51.1	59.1
UK	50.2	54.5	60.7	62.5
US	64.4	68.8	71.3	74.7

Conclusions

- In many cases over half the voters are already over pension breakeven ages
- These countries are at risk of being in a pension trap
  - Policymakers are more likely to raise taxes than cut benefits
  - Over time this risk will increase
- Our analysis limited to pensions but including health care might change voting dynamics
  - Health systems are further out of balance
  - Means people at older ages are facing adjustments and more of them are out of the money
  - Could raise the risk of benefit cuts rather than tax increases

Under Funding of National Retirement systems: The Reality and Risks of Current Policies

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