

Changing Demographics— and the New Economy

Thomas F. Stinson
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We Are Headed to a New Economy

- **We are moving to a New Economy**
- **The U.S. is not alone -- it is happening globally**
- **Those who recognize this and adapt first will be most successful**
- **The next four years will be critical**

The Economic Outlook 2018-2020

	2016	2017	2018	2019	2020
	<i><u>Percent</u></i>				
Real GDP Growth	1.5	2.1	2.3	2.0	1.9
CPI	1.3	2.0	2.0	2.1	2.0
10 Year Treasury	1.8	2.4	3.3	4.2	4.5

The U.S. Economy Has Been Growing Since 2009

- We are in the third longest expansion in U.S. history
- Real GDP has grown by 18.6 percent (about 2.2 percent per year) since the Great Recession ended
- U.S. payroll employment is up by 15.7 million jobs, 12 percent, since June 2009 – up 8.3 million from pre-recession high
- The unemployment rate was 7.8 percent in June 2009; in August it was 4.4 percent
- The CPI has increased only 14 percent since recession's end

Three Economic Facts of Life

Our Standard of Living depends on output per resident

Output = Output per Hour * Hours Worked

If the ratio of workers to residents declines productivity will need to increase just to maintain our current living standard

How Do We Increase Output

- Increase the number of people working
 - Increase labor force participation rate
 - Immigration
- Increase output per worker (productivity)
 - More hours
 - More equipment
 - More productive equipment
 - Improved infrastructure
 - Better trained workers
 - Healthier workers
 - Multifactor productivity (worker efficiency after allowing for improvements in equipment)

**Productivity Is Not Just Producing
at a Lower Cost**

Increasing Productivity Also Means

■ Making things better

(improved quality)

■ Making better things

(innovation, new products)

Focusing Just On Cost Cutting May Be Short Sighted

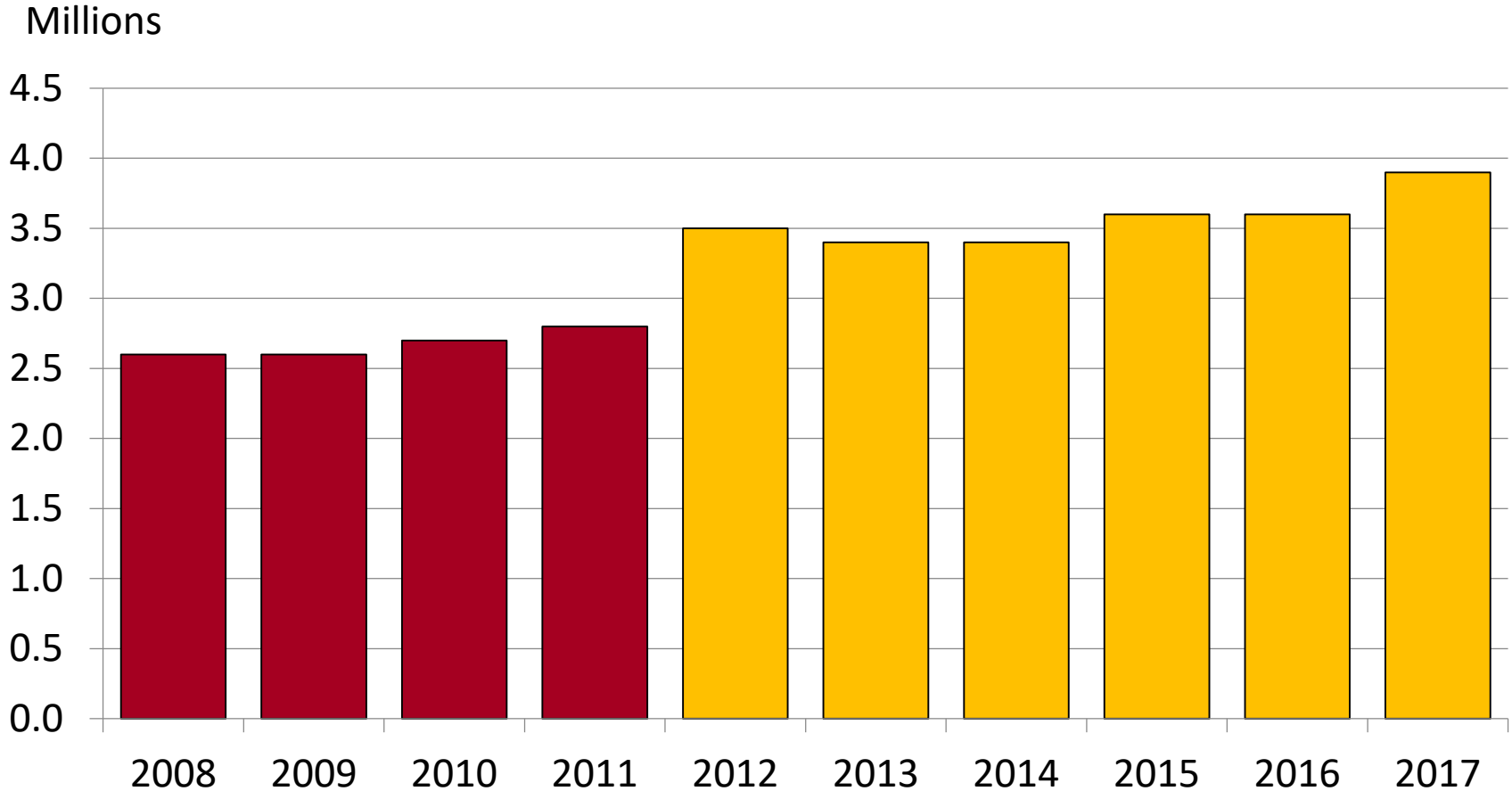
Long term productivity increases
may require some investments
which increase short term
expenditures

How Do We Increase Productivity?

- **Productivity depends on**
 - **The stock of physical capital**
 - **The stock of human capital**
 - **Education**
 - **Health status**
 - **Experience**
 - **The stock of infrastructure**
 - **Advancements in technology**

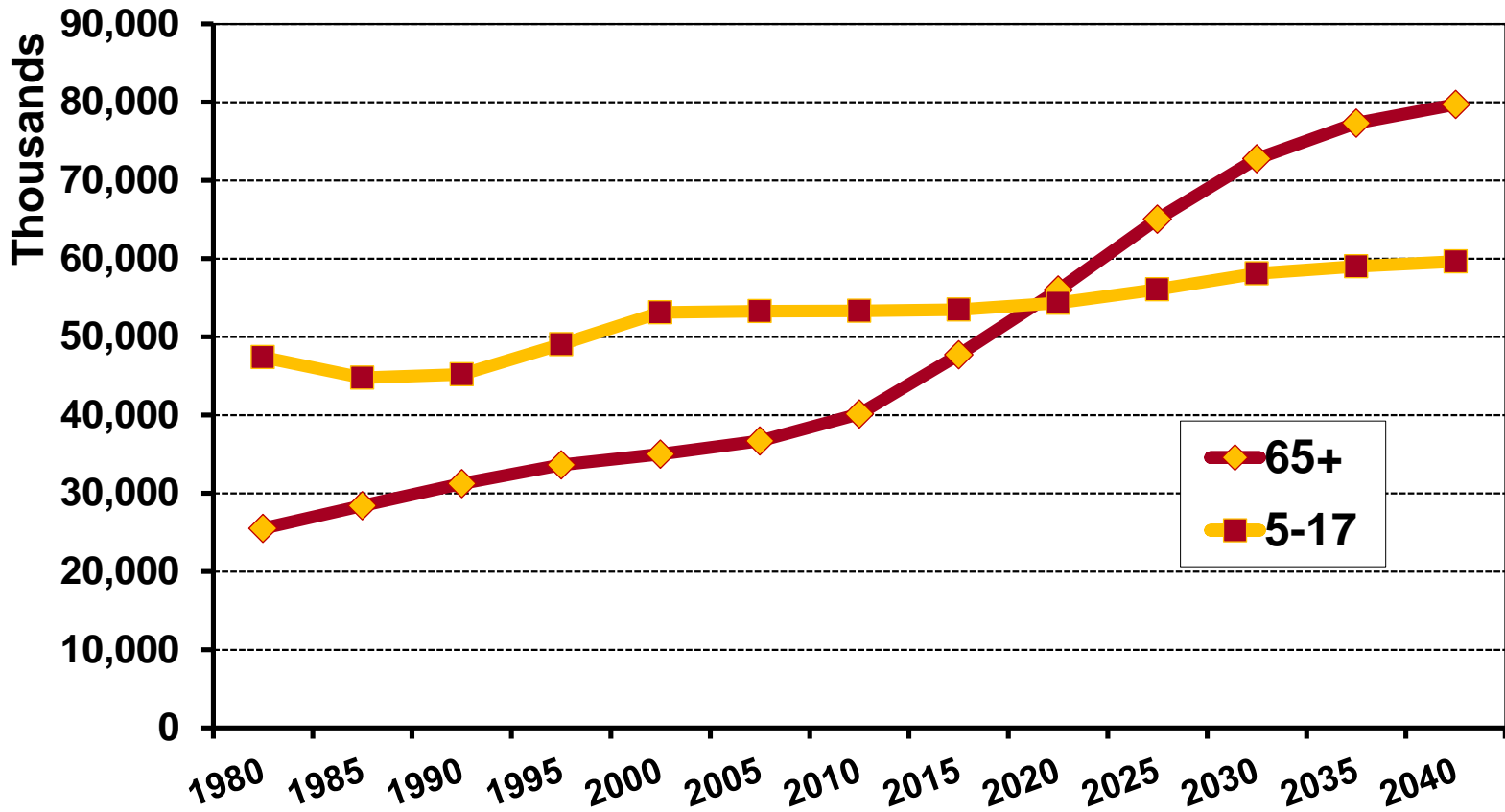
**Productivity Increases Needed to
Offset the Impact of an
Unprecedented Demographic Shift**

The Number Of Americans Turning Age 65 Increased Sharply (25%) In 2012



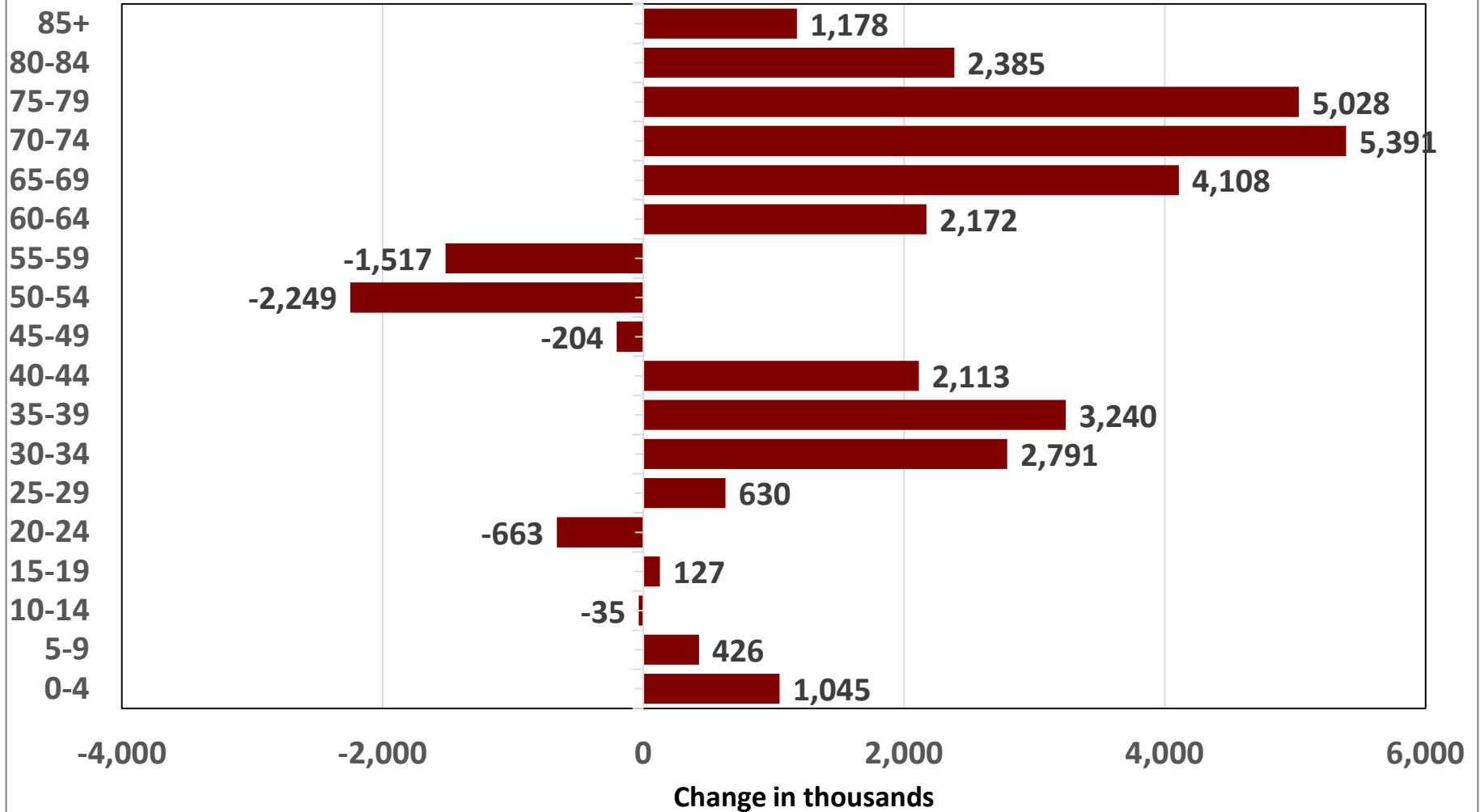
US Census Bureau ACS

By 2020 The United States Will Have More People 65+ Than School Age

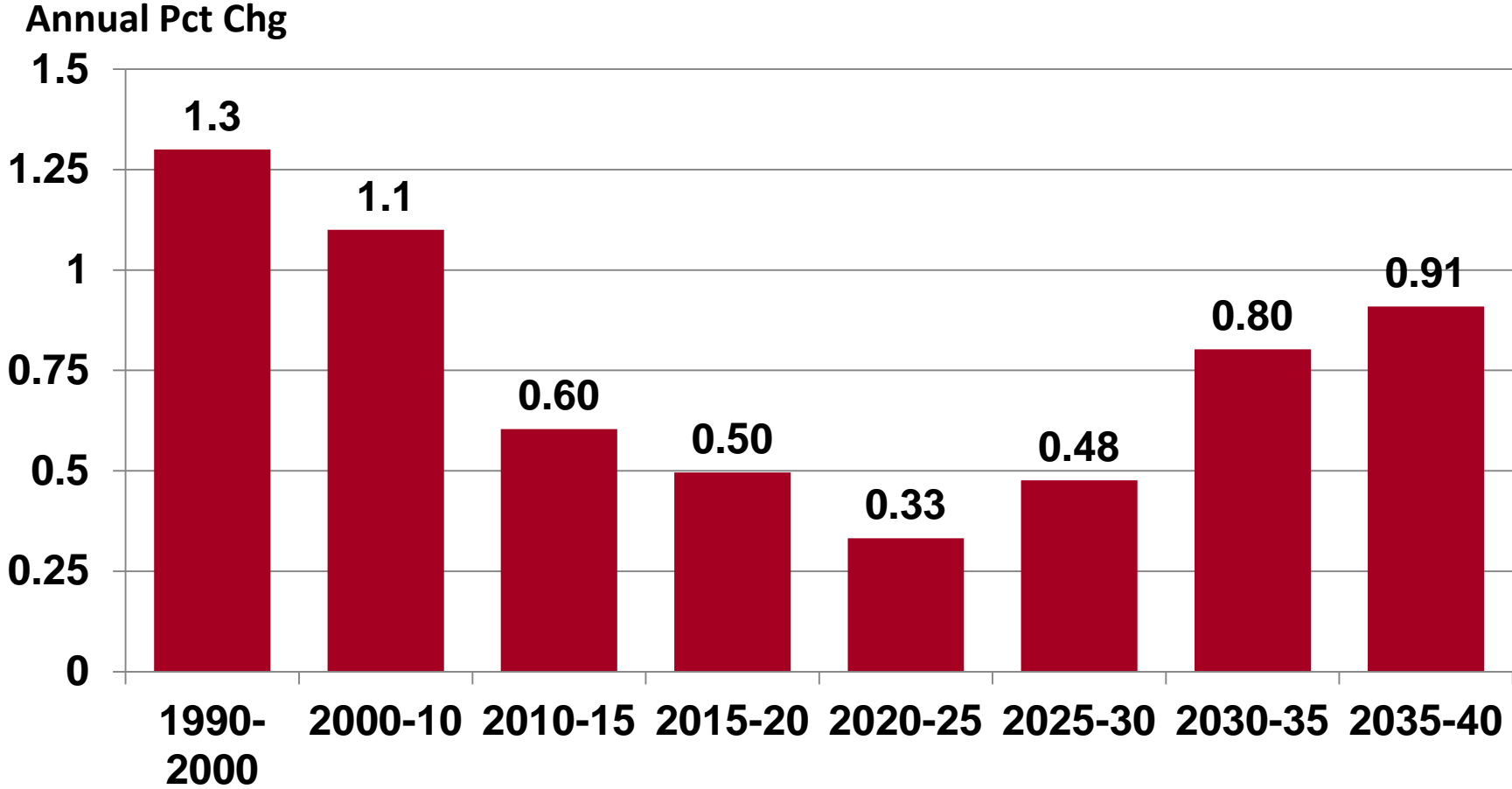


Census Bureau forecast 2012

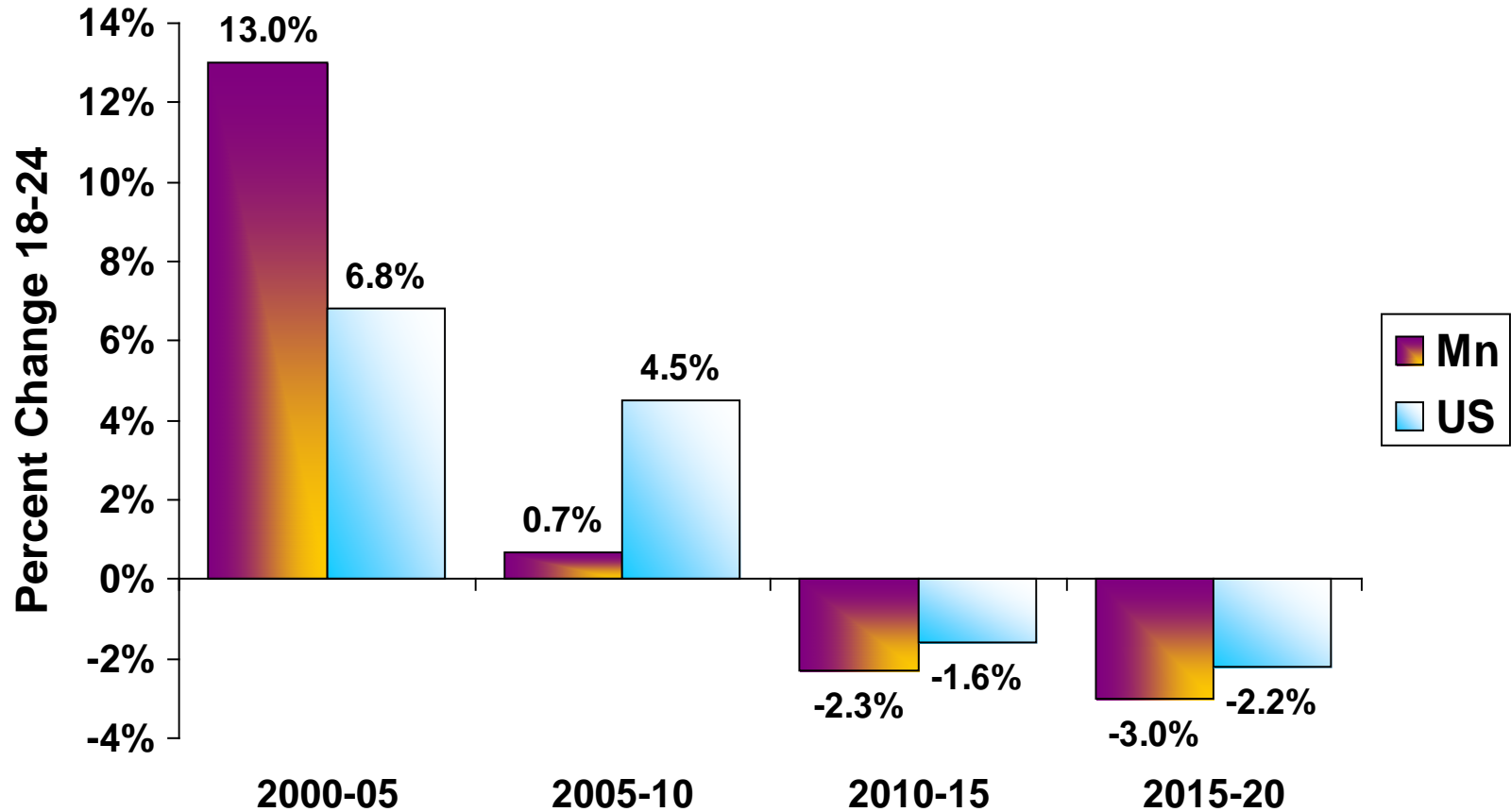
From 2015 to 2025 the U.S. Will See Large Increases in Age 60s and 70s



Labor Force Growth Has Slowed Sharply and Will Slow Further



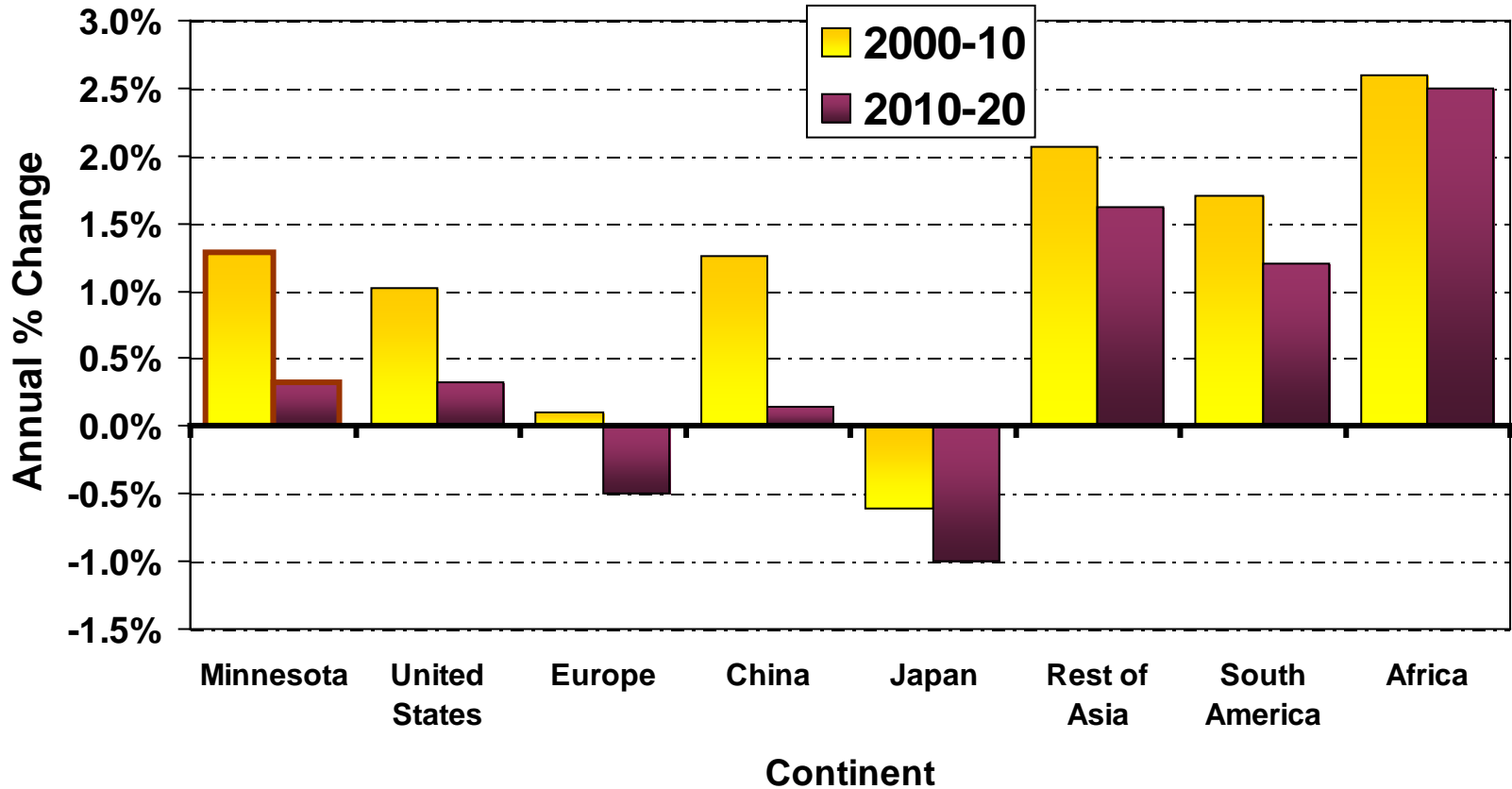
Competition for Future Entrants to the Workforce Will Increase



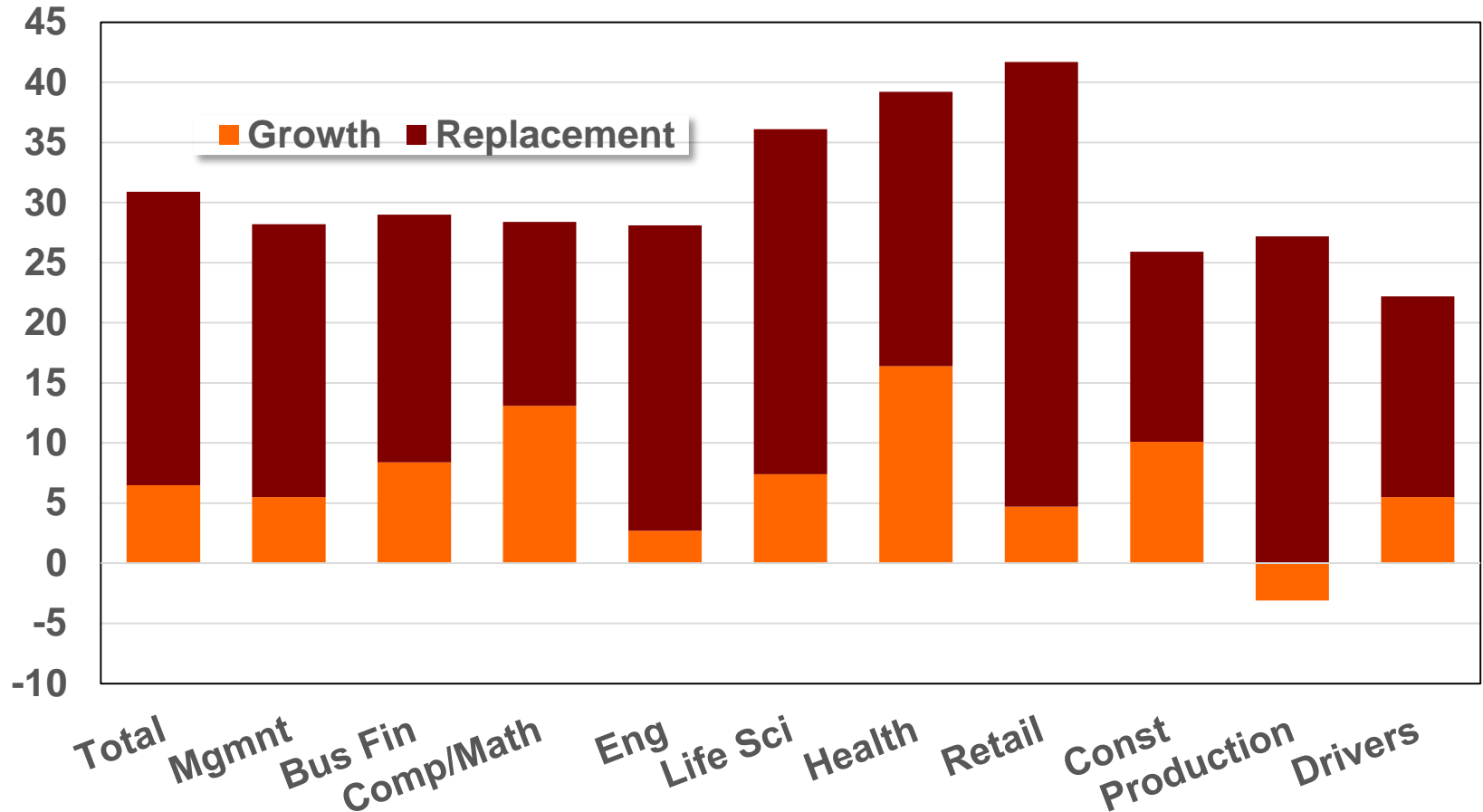
Census Bureau US Proj, Mn State Demographer Mn Proj

World Labor Force Growth Slowing

Projected Change In Working Age Population (15-64)



For Many Occupations Replacements Will Exceed New Job Growth



**The
Economist**

OCTOBER 7TH-13TH 2006

www.economist.com

China, Japan and North Korea's nukes

The great Airbus crisis

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Angela's ashes: Merkel in trouble

The search for talent

Why it's getting harder to find

A 15-PAGE SPECIAL REPORT



The New 3 R's for Economic Success in the 21st Century

Retention

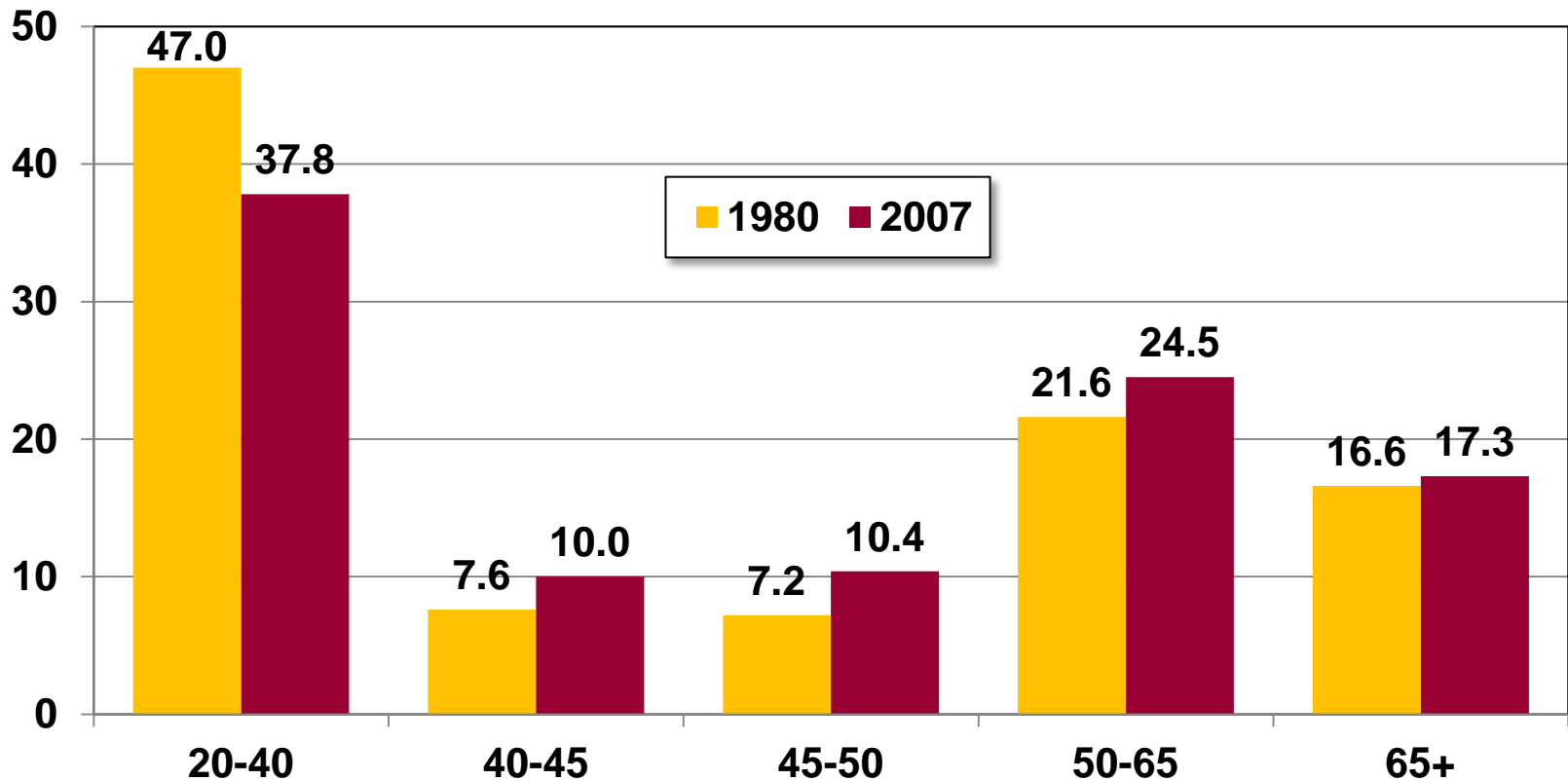
Recruitment

Retraining

Research

The Age Distribution Has Also Changed

% of Population
Over Age 20



**Changes in Age Distribution Affect
the Economy in Other Ways as Well**

The Age Distribution also Affects the Economy

- Worker productivity changes with age
- Consumption patterns are different as we get older
- Savings patterns adjust over the life-cycle
- Public sector demands and revenues also change

Consumption over the Life Cycle

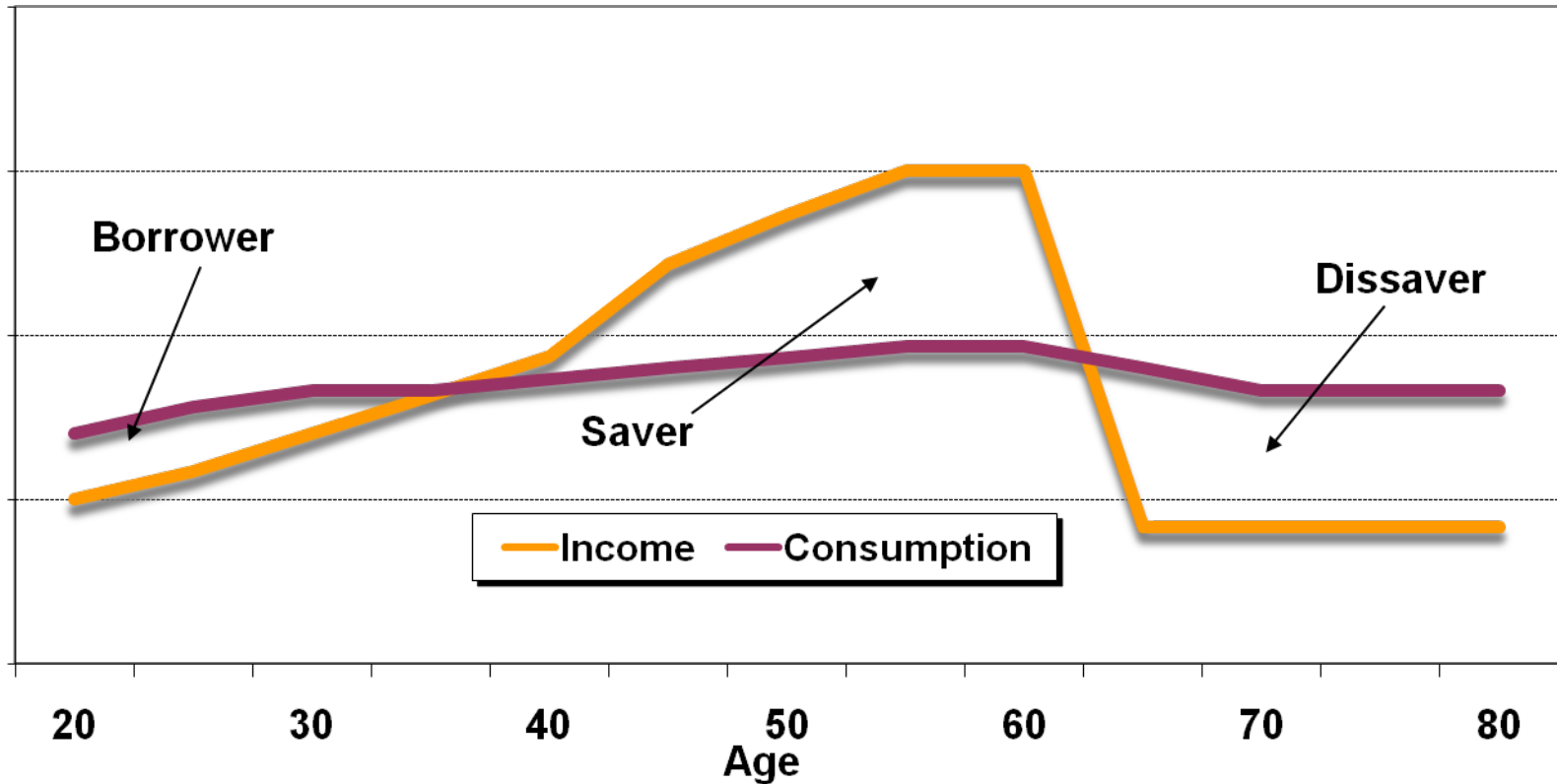
- Household consumption patterns differ depending on their position in the life cycle
- Modigliani's life cycle hypothesis helps explain implications of demographics on the economy
- Particularly important now with the baby boom moving toward retirement

Modigliani's Model

- Observed – incomes vary over each individual's lifetime
- Hypothesized – rational individuals prefer smoother consumption patterns
- Credit markets are available to level out consumption over time
- Combining income path and desired consumption path divides the life cycle into three segments – borrower, saver, and dissaver

Phases in the Household Life Cycle

Dollars



Macro-Economic Implications of Life Cycle Behavior

- Little impact if age distribution is triangular or uniform
- Large cohort between two smaller cohorts can change the economy's performance
- Aging of the baby boom affects more than the demand for certain types of products

Life Cycle Hypothesis and Interest Rates

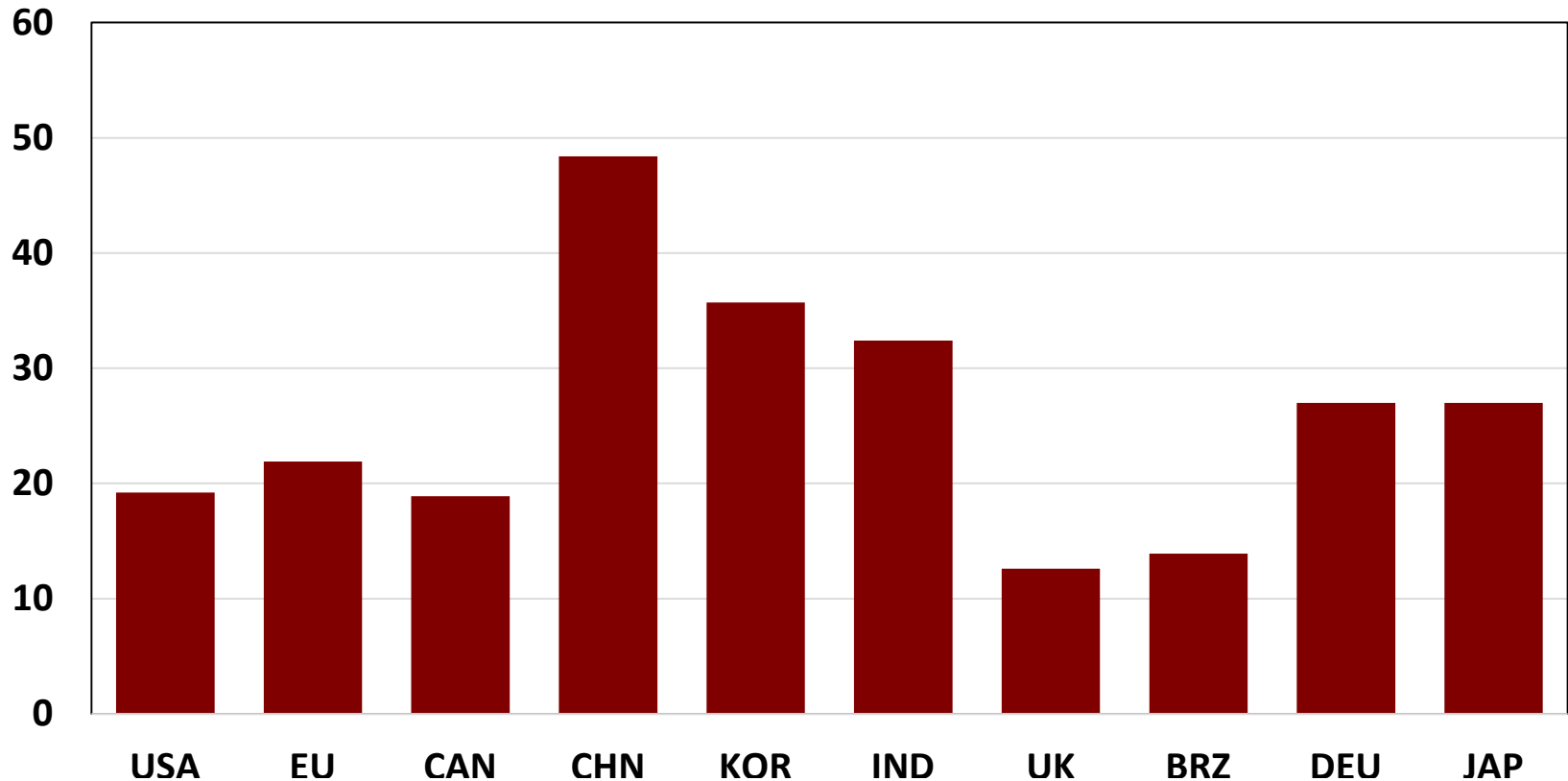
- Baby boom cohort has affected interest rates
- When net borrowers, higher interest rates needed to produce savings needed to finance Baby Boom borrowing
- When net savers, interest rates lower due to lack of borrowers
- During dissaver phase interest rates will increase as savings diminish

What Will Happen When Baby Boom Becomes Net Dissavers?

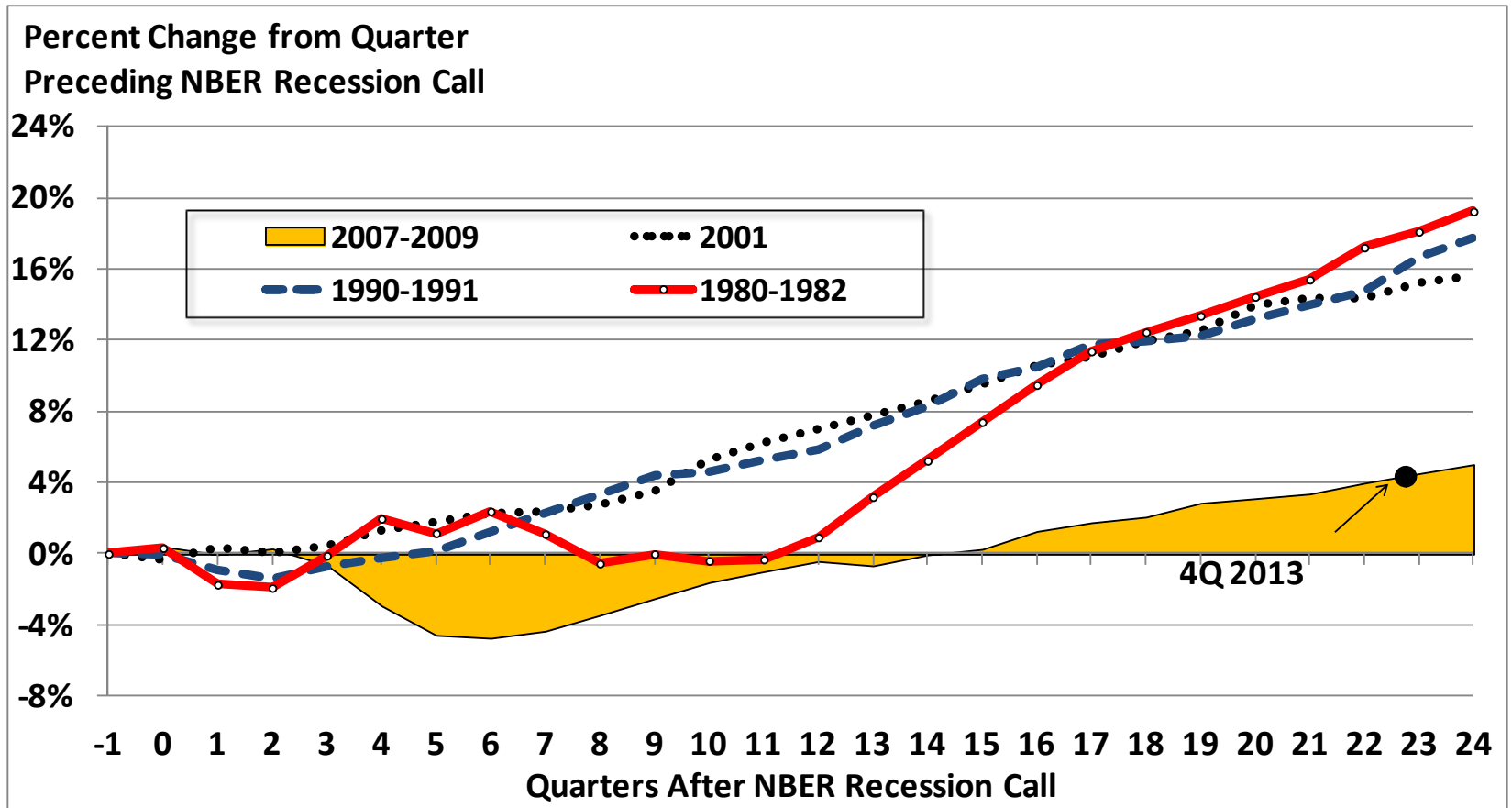
- Interest rates will increase
- Housing values plateau
- Equity values may decline

Gross Savings in China Are Nearly 50 Percent of GDP

% of GDP



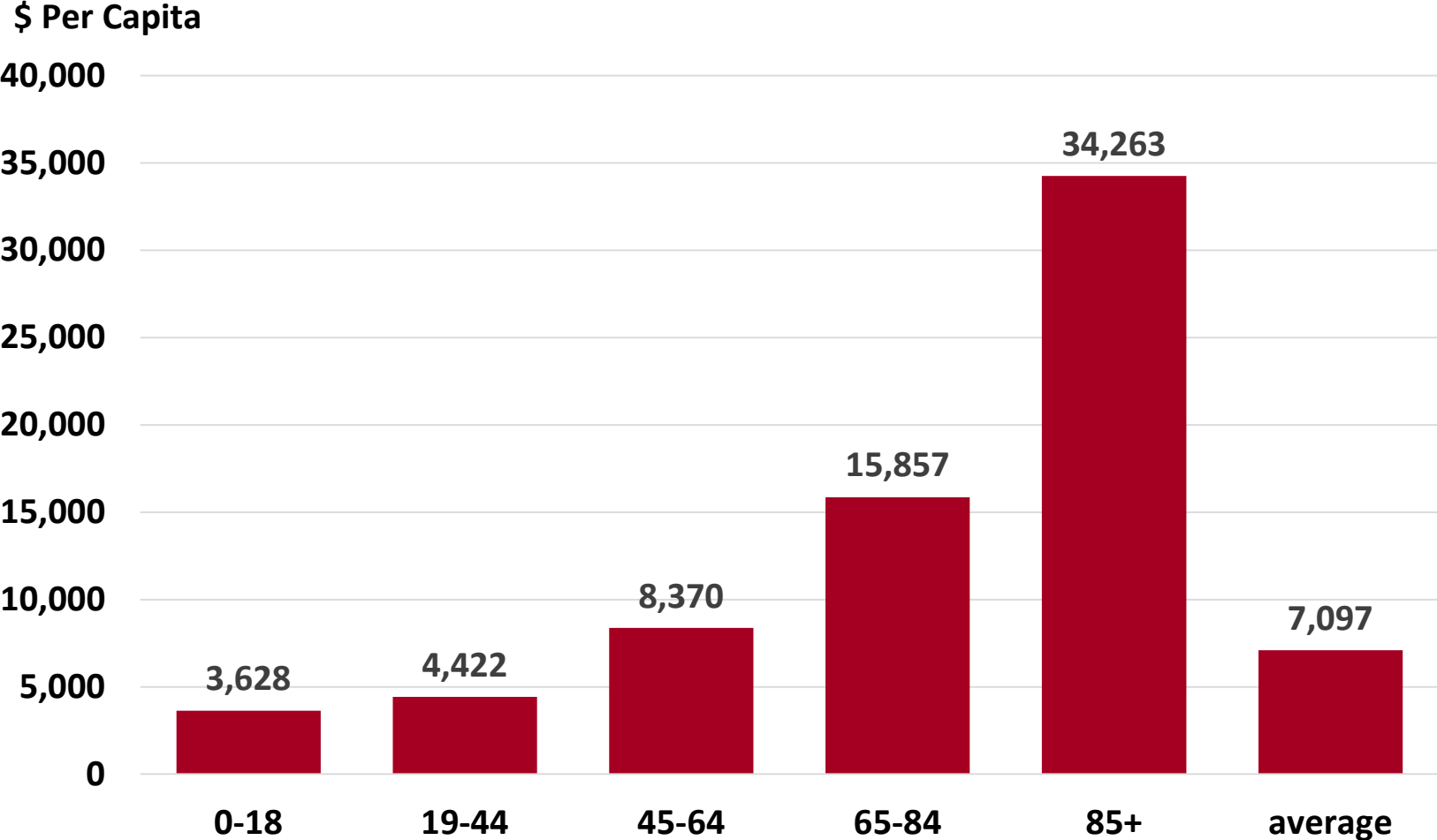
Recovery from the Great Recession Was Slower Than from Earlier Recessions



Precautionary Balances, Pent-up Demand, and Economic Recovery

- Economy shows signs of weakness
- Consumers increase precautionary balances to provide a cushion against adverse shock
- Discretionary spending cut-back, durable goods purchases delayed, savings increased, economy slows further
- Eventually times get better, precautionary balances too high
- Consumers reduce precautionary balance and use money to purchase consumer durable goods

Health Care Spending Jumps as We Age



State Taxes Paid by a Married Couple Before and After Retirement

<i>Income</i>	Income Tax	Sales Tax	Total	Change	Pct
<hr/>					
<u>Working</u>					
\$35,000	\$1,236	\$782	\$2,018		
\$65,000	\$3,387	\$1,295	\$4,682		
<u>Retired @ 70 %</u>					
\$25,000	\$0	\$559	\$559	-\$1,459	-72%
\$45,000	\$1,091	\$896	\$1,987	-\$2,695	-58%

Key Changes in the “New Economy”

- **Labor and talent will be the scarce resources**
- **Higher interest rates**
- **Slower economic growth**
- **A single-minded focus on productivity**
- **Increasing numbers of retirees**
- **A more diverse population**
- **More uncertainty about the future**

“I skate to where the puck will be, not to where it has been.”

Wayne Gretsky
Famous Canadian Philosopher