

# **Demographics and Workers Compensation: Examples From Recent NCCI Research**

CAS 2009 Spring Meeting  
New Orleans, LA  
May 4, 2009

Martin H. Wolf, PhD

# Topics to Be Discussed

Overview of How Demographics Affects:

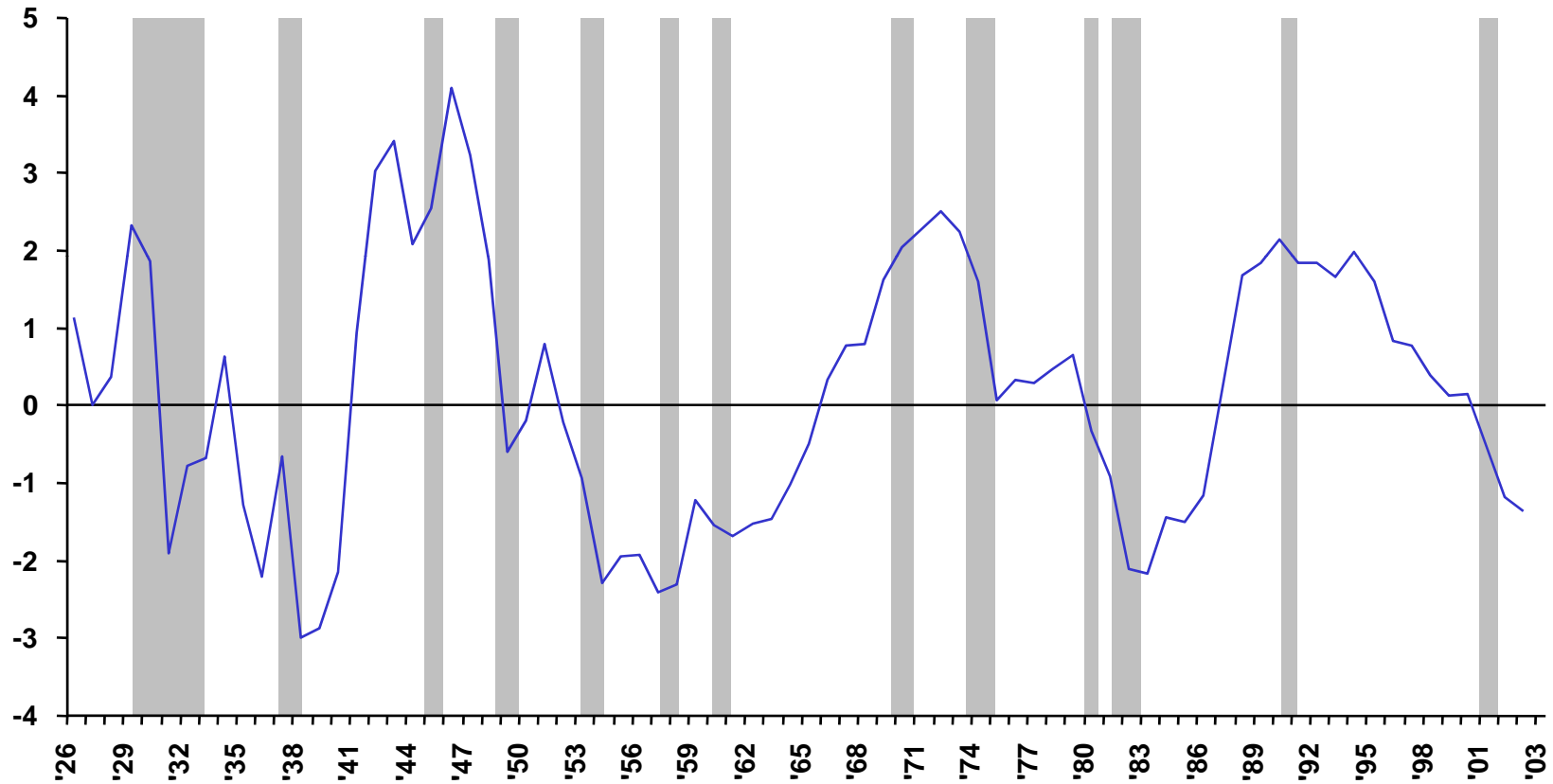
- Claim Frequency
- Indemnity Severity
- Medical Severity

Preliminary Findings from New NCCI Research on the Workers Compensation Implications of Persons Working Past Age 65

Data Sources Relating to Demographics and Workers Compensation

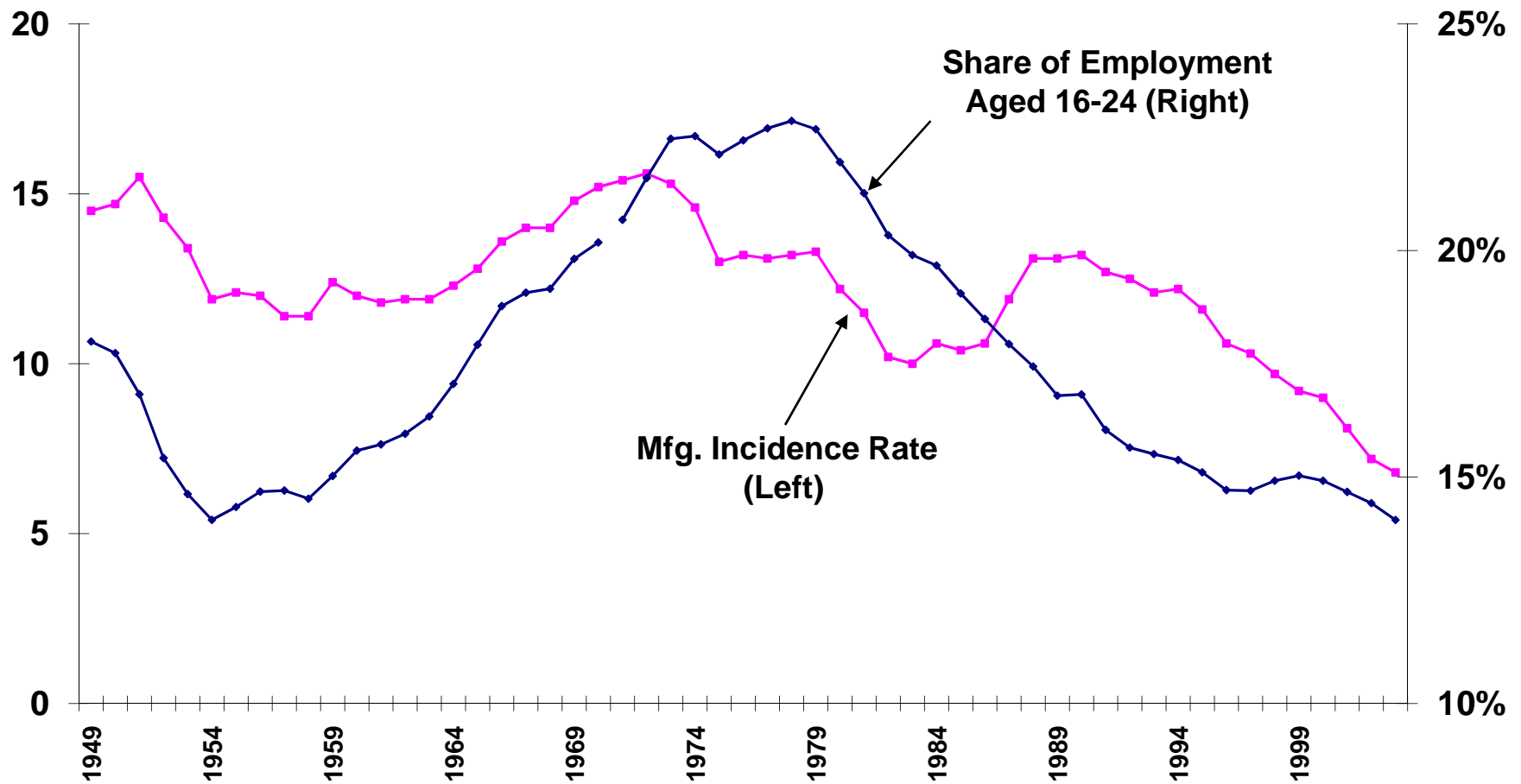
# Implications of Demographics on Claim Frequency

# Manufacturing Incidence Rates, Deviation From Trend, 1926–2004



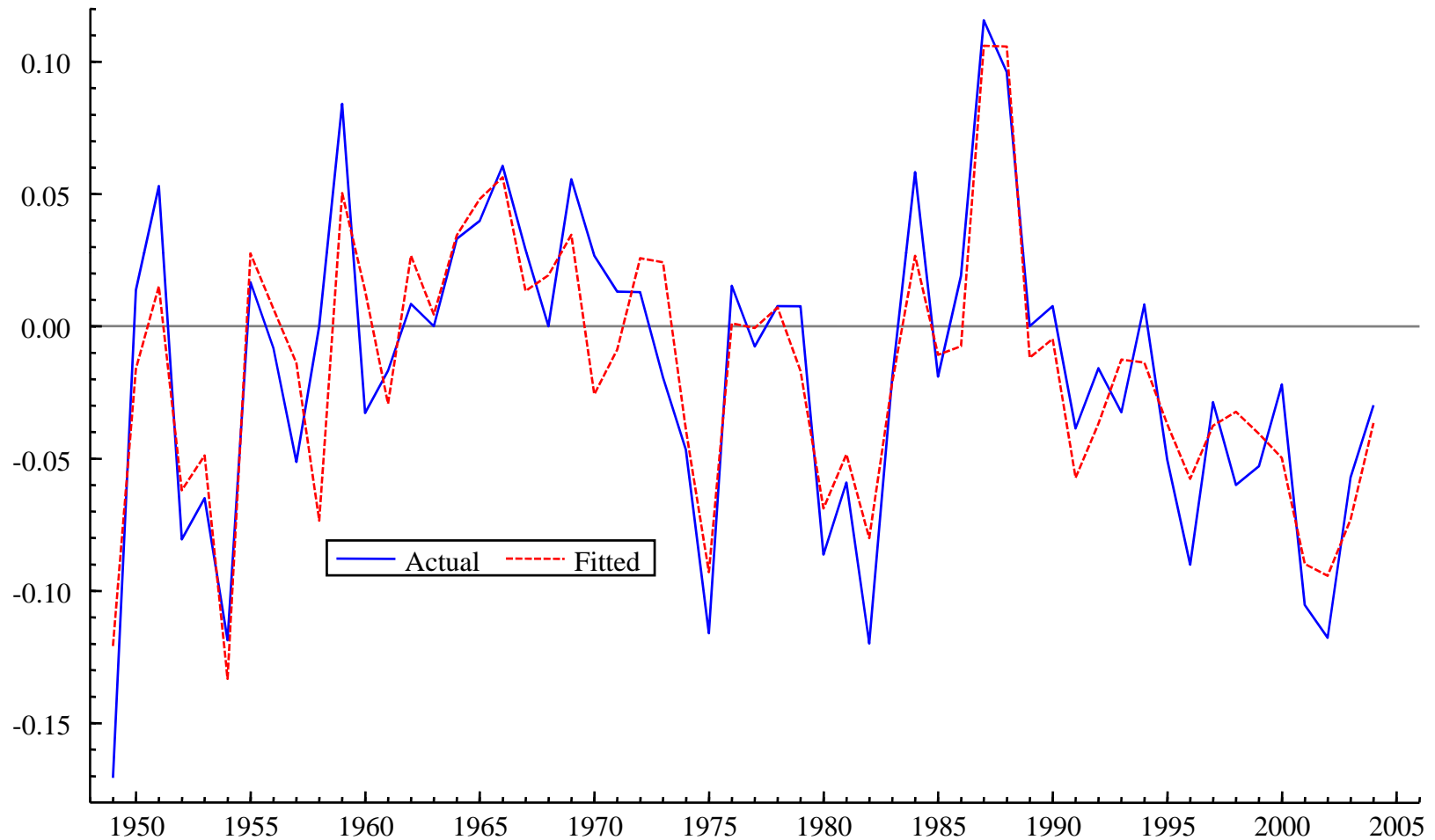
Source: U.S. Bureau of Labor Statistics and NCCI

# Incidence Rate Patterns Roughly Track Changes in the Share of Younger Workers



Source: U.S. Bureau of Labor Statistics

# Model 1: Log-Difference Manufacturing Incidence Rates vs. Log-Difference Unemployment Rate, Log-Difference Employment Share Aged 16–24 and Dummy (87–88 = 1, else 0)



Source: NCCI

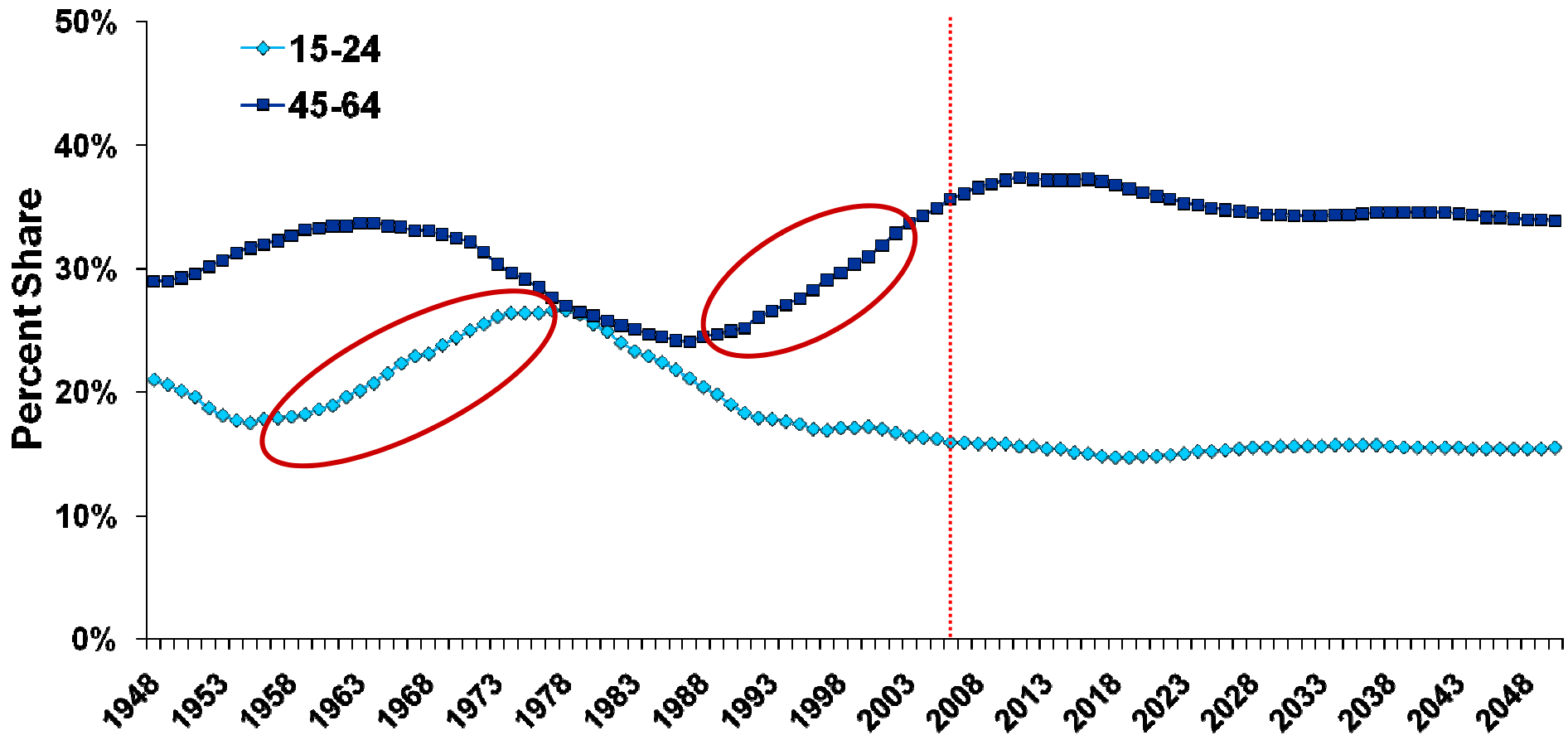
# Results of Regression Analysis

|                | Trend   | LDUNR   | LDEMPSH | DUM    | R <sup>2</sup> |
|----------------|---------|---------|---------|--------|----------------|
| Model 1        | -0.0507 | -0.1410 | 0.6144  | 0.1007 | .647           |
| <i>t</i> value | (-3.03) | (-5.99) | (2.66)  | (4.01) |                |

Source: NCCI

# Forecasts of Labor Force Shares Show Only Small Changes in the Future

Percentage of the Labor Force



Estimates obtained by multiplying labor force participation rates by age cohort (from U.S. Bureau of Labor Statistics) by the population for each cohort (historical and projected population data from the U.S. Census Bureau). Labor force forecast is based on the 2006 participation rate.

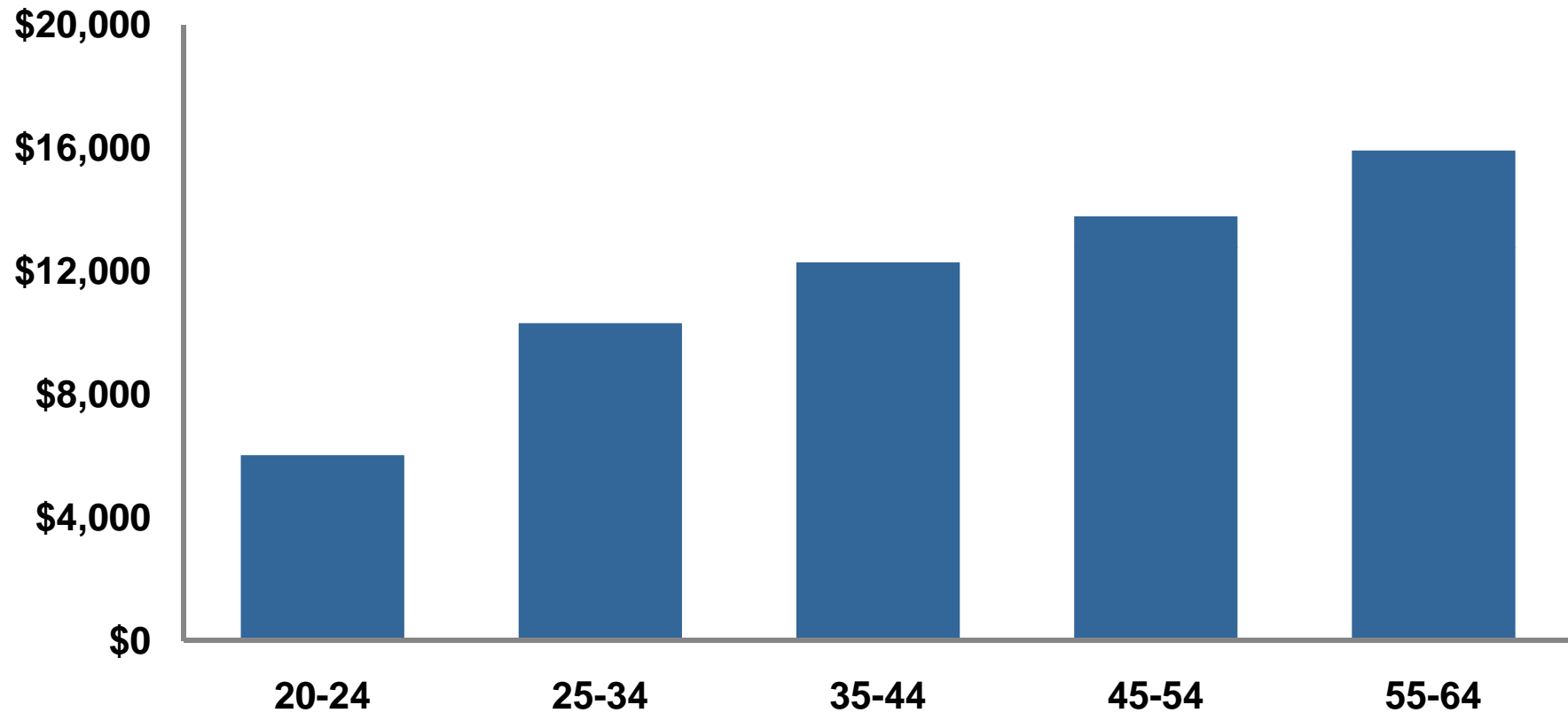
Source: NCCI. Derived data for all years (including historical period).



# Impact of Demographics on Indemnity Severity

# Indemnity Severity Increases With Age

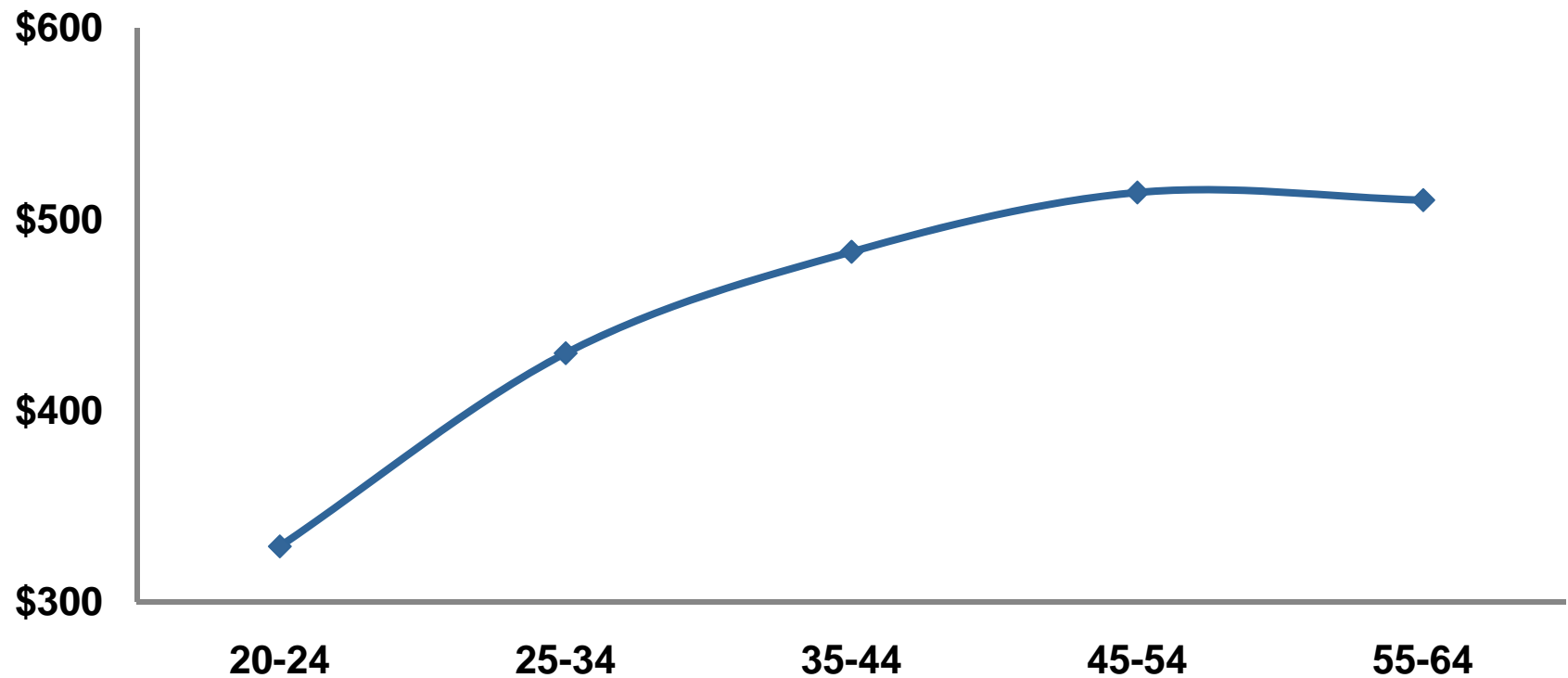
Average Paid + Case Indemnity Severity  
Reported at 18 Months by Age  
Accident Year 2005, NCCI States



Source: NCCI

# Average Weekly Wage Increases With Age

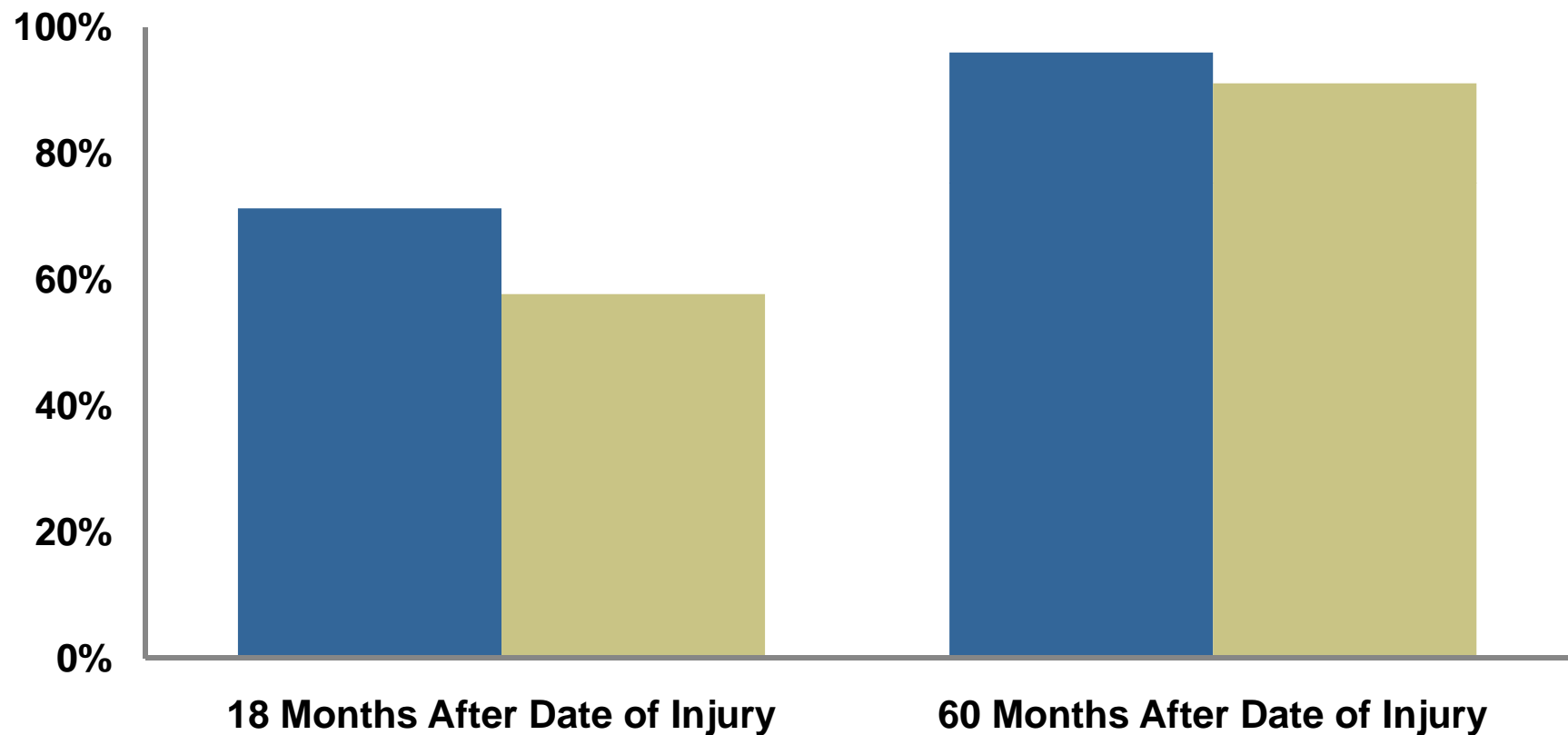
Average Weekly Wage of Injured Workers Closed Claims at  
60 Months, 1996-2003, NCCI States



Source: NCCI

# Older Workers Have Fewer Claims Closed Than Younger, Both at 18 and 60 Months After Injury

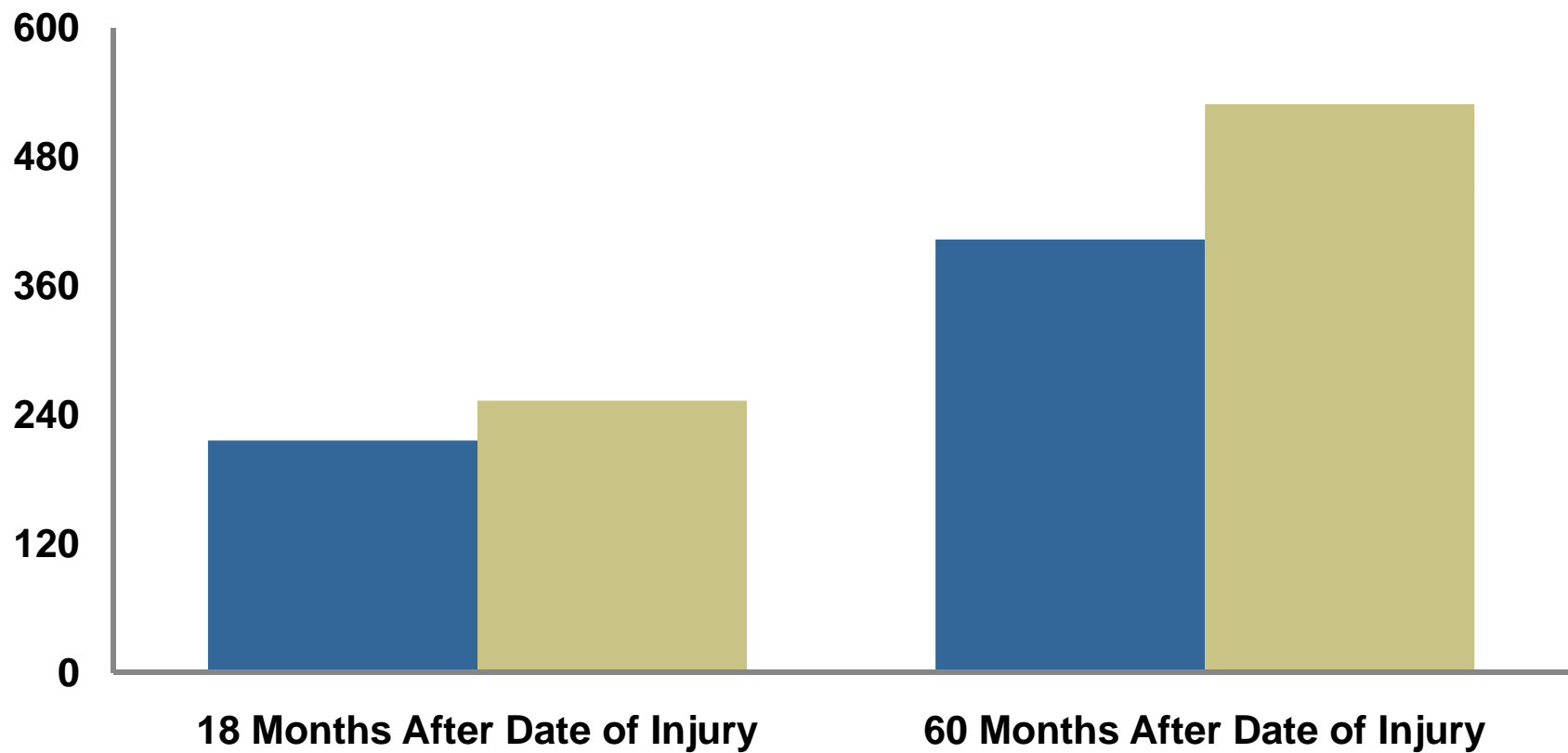
Percentage of Claims That Are Closed, 1996-2003, NCCI States



Source: NCCI

# Average Duration Is Longer for Older Workers

Average Days From Date of Injury to Closure, Closed Claims  
1996-2003, NCCI States

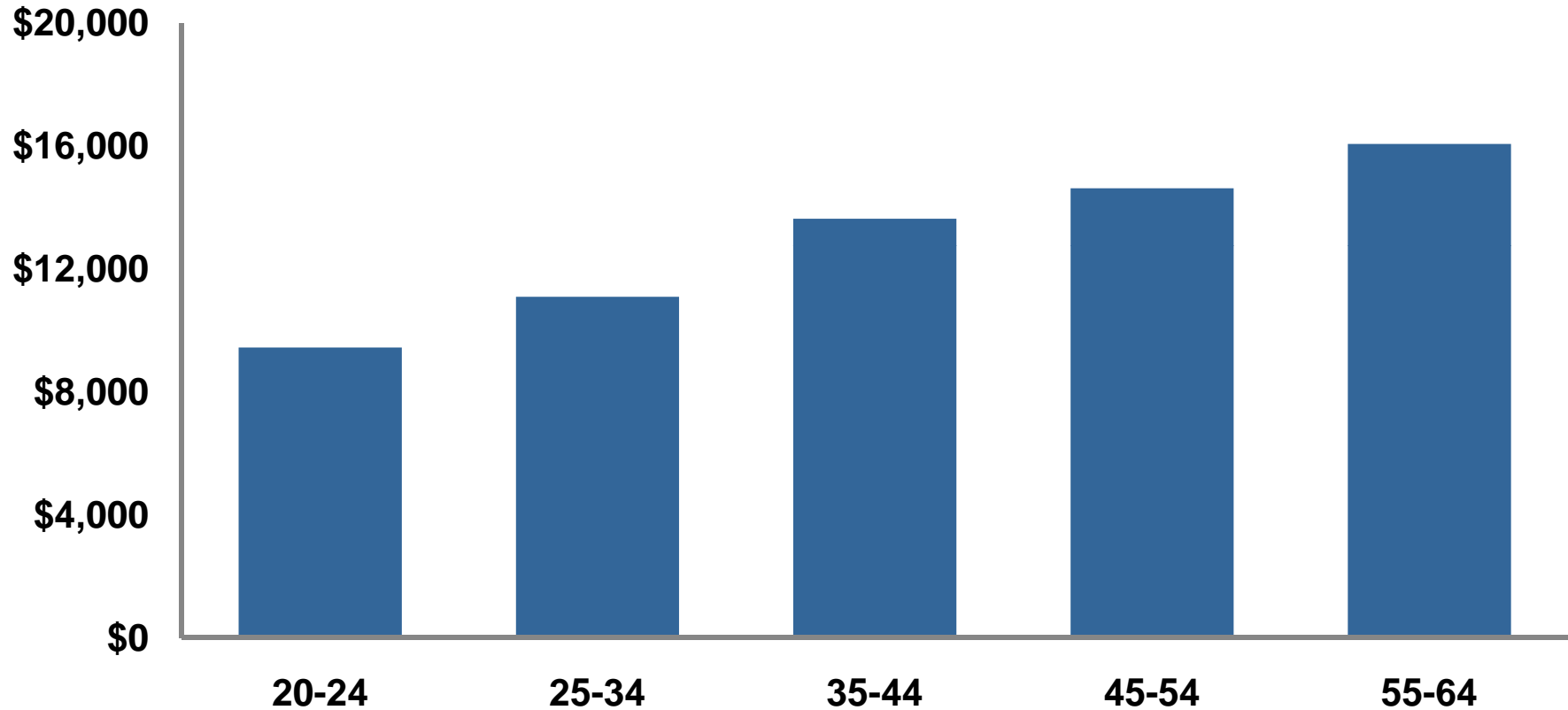


Source: NCCI

# Impact of Demographics on Medical Severity

# Medical Severity Increases With Age

Average Paid + Case Medical Severity  
Reported at 18 Months by Age  
Accident Year 2005, NCCI States



Source: NCCI

# Rankings of Top Ten Lost-Time Claim Diagnoses

1996-2003, NCCI States

## Ages 20-34

- 1 **SPRAIN LUMBAR REGION**
- 2 **LUMBAR DISC DISPLACEMENT**
- 3 **CARPAL TUNNEL SYNDROME**
- 4 **LUMBAGO**
- 5 **CERVICALGIA**
- 6 **LOWER LEG INJURY NOS**
- 7 **SPRAIN OF ANKLE NOS**
- 8 **SPRAIN OF NECK**
- 9 **LUMBOSACRAL NEURITIS NOS**
- 10 **SPRAIN LUMBOSACRAL**

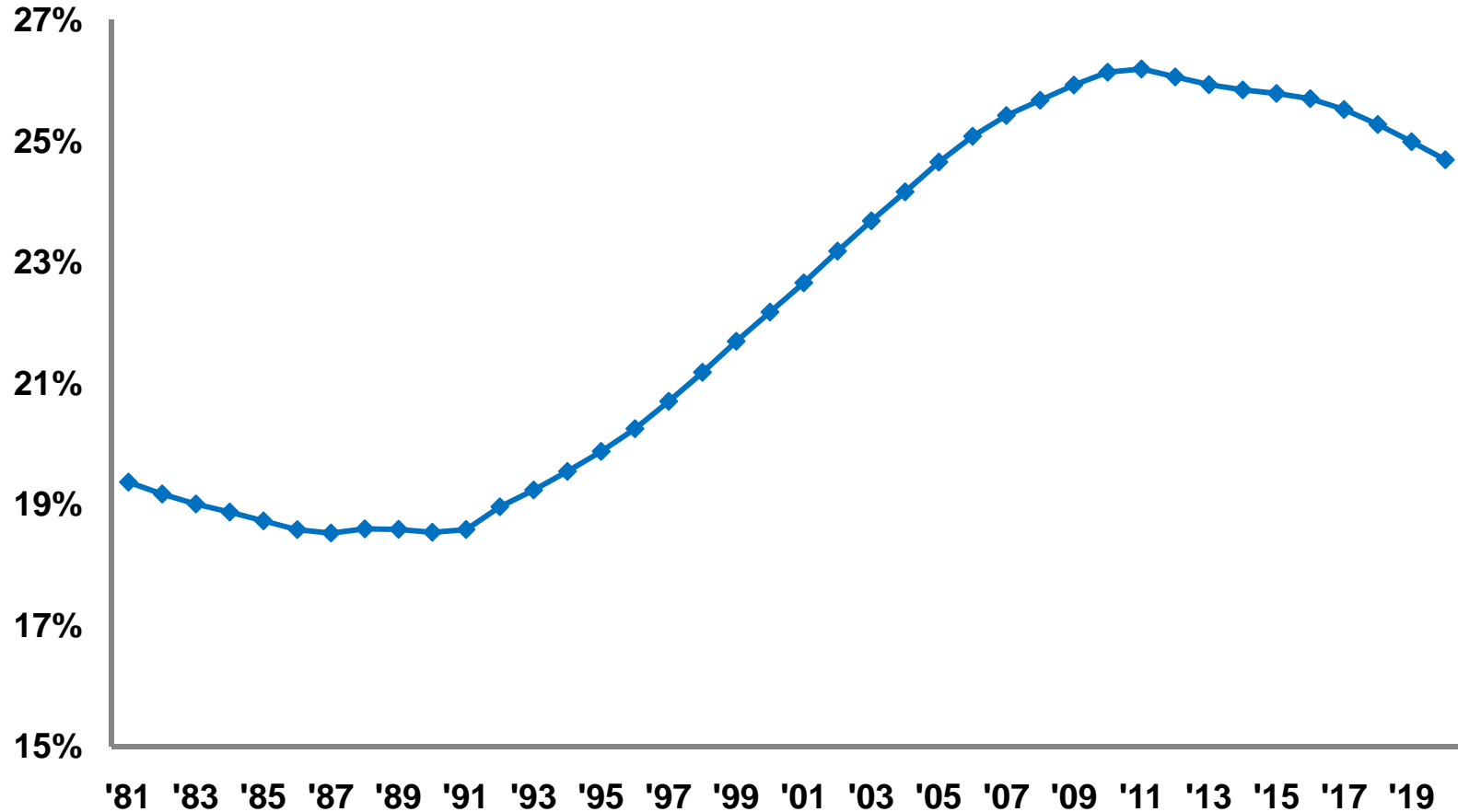
## Ages 45-64

- 1 **CARPAL TUNNEL SYNDROME**
- 2 **LUMBAR DISC DISPLACEMENT**
- 3 **SPRAIN ROTATOR CUFF**
- 4 **TEAR MENISCUS KNEE**
- 5 **CERVICALGIA**
- 6 **SPRAIN LUMBAR REGION**
- 7 **ROTATOR CUFF SYNDROME NOS**
- 8 **LUMBOSACRAL NEURITIS NOS**
- 9 **LUMBAGO**
- 10 **LOWER LEG INJURY NOS**

Source: NCCI



# The Share of U.S. Population 45 to 64 Is Expected to Peak in 2011



Source: U.S. Census Bureau; Moody's Economy.com

# **Working Past Age 65**

## **Implications for Workers Compensation**

# Working Past Age 65

## Why More Older Workers?

**Two Motivations:**

**Wanting to Work Longer**

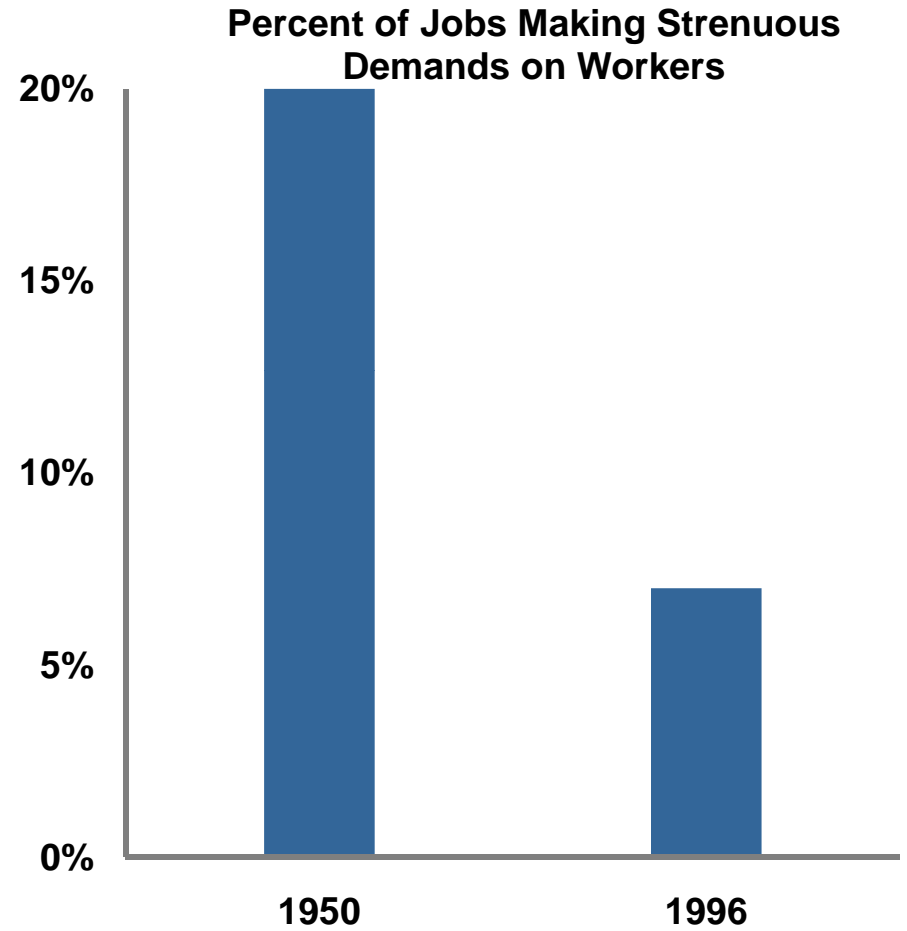
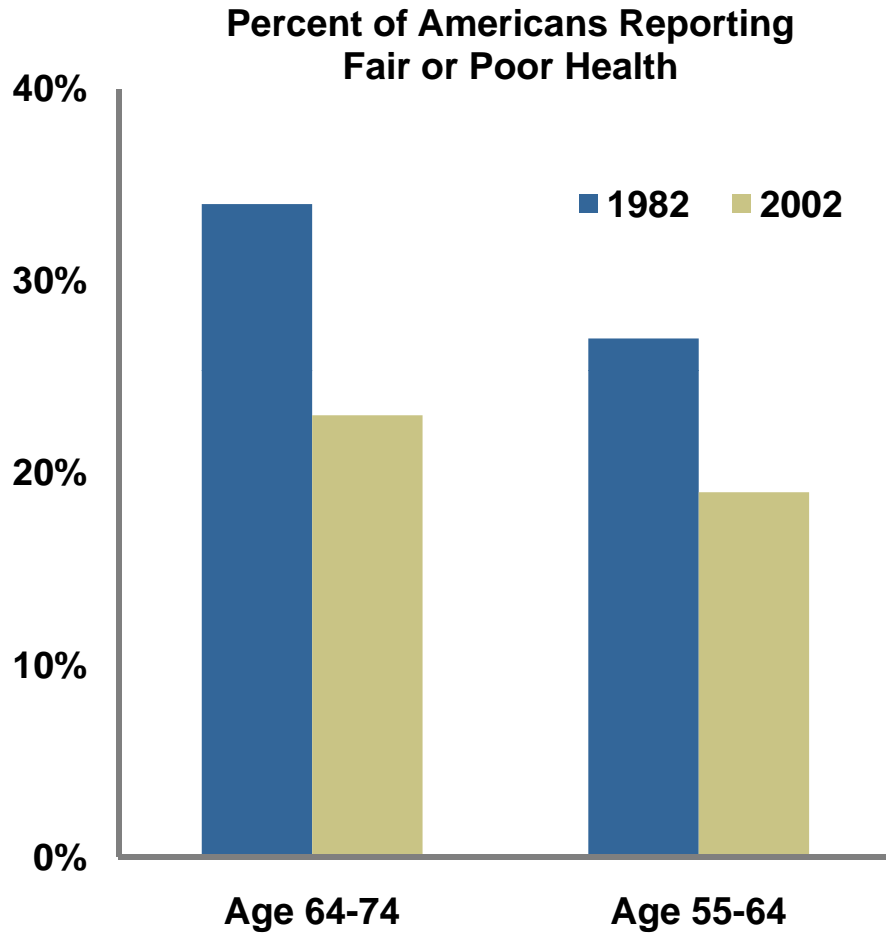
**Needing to Work Longer**

# Working Past Age 65

## Wanting to Work Longer

- Prohibitions Against Mandatory Retirement
- Changes in Social Security (Removal of Earnings Cap)
- Improved Health Characteristics/Less Strenuous Work Environment

# Improved Health, Less Strenuous Jobs



Source: The Urban Institute

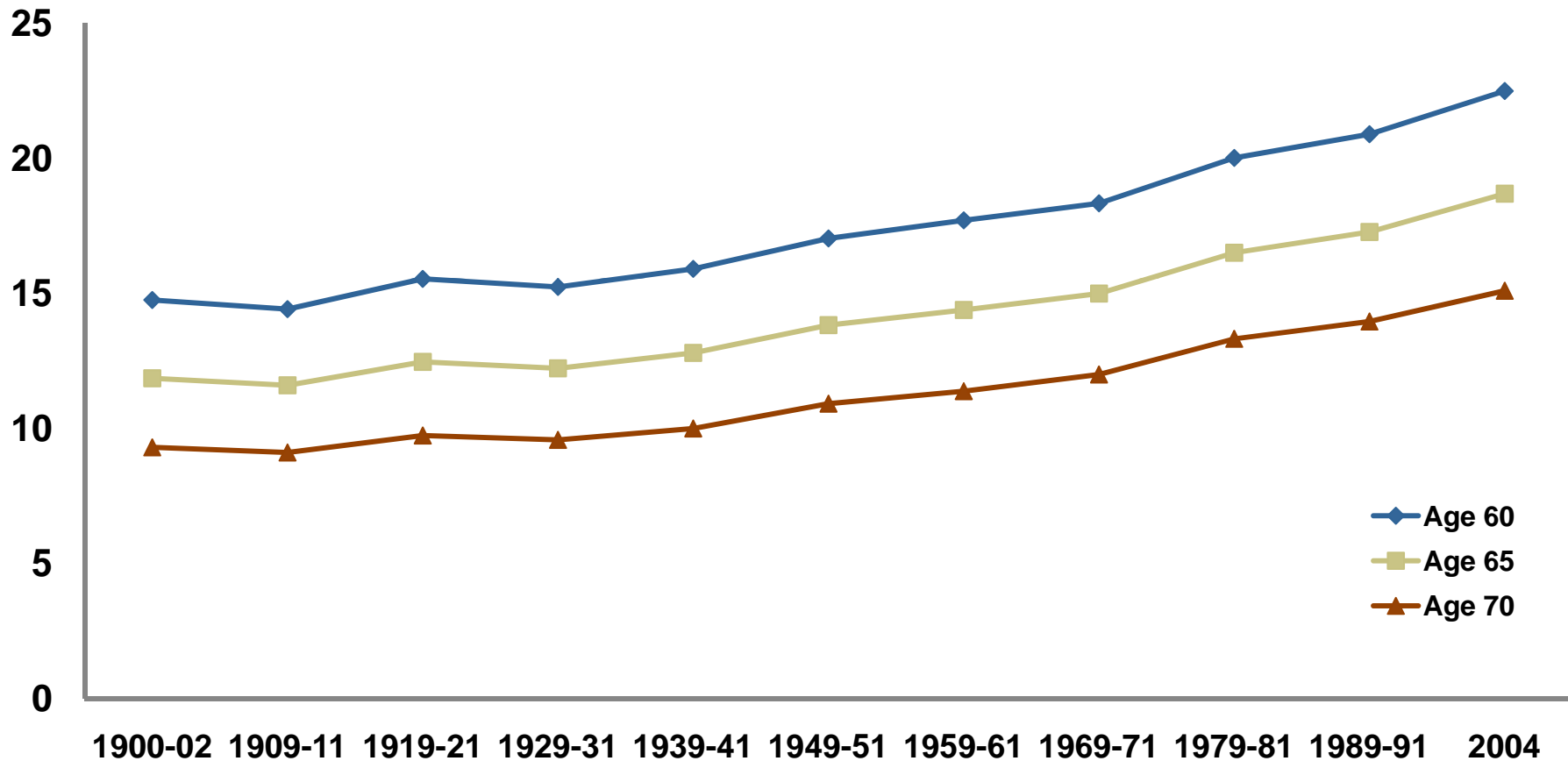
# Working Past Age 65

## Needing to Work Longer

- Increased Life Expectancy
- Changes in Pension Plans
- Increased Healthcare Costs
- Financial Meltdown

# The “Expectation of Life” Has Been Steadily Increasing for Older Persons

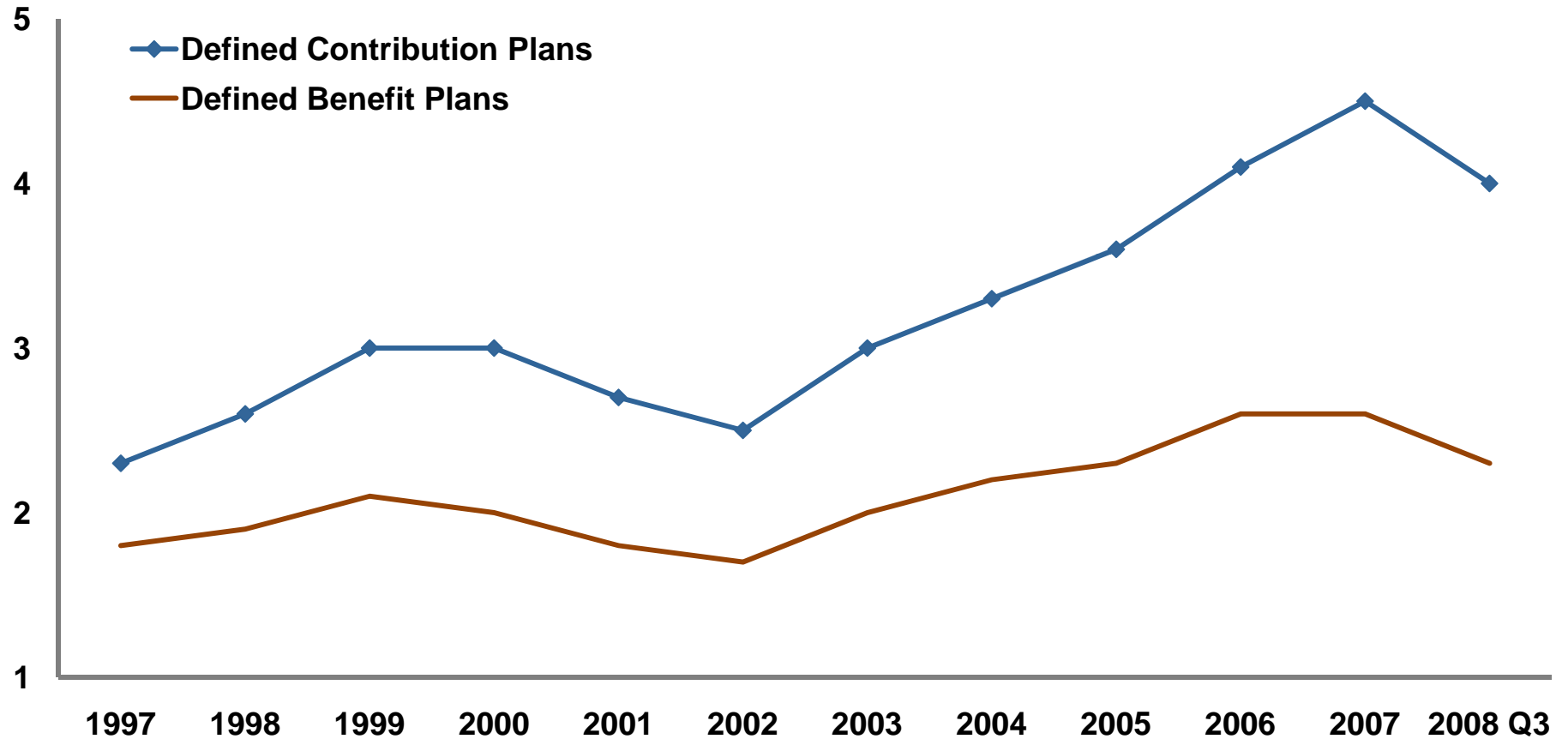
Avg. No. of Years Remaining to Be Lived for Persons Surviving to Age Shown



Source: National Vital Statistics Reports, Centers for Disease Control and Prevention

# There Is an Ongoing Shift Toward Defined Contribution Pension Plans

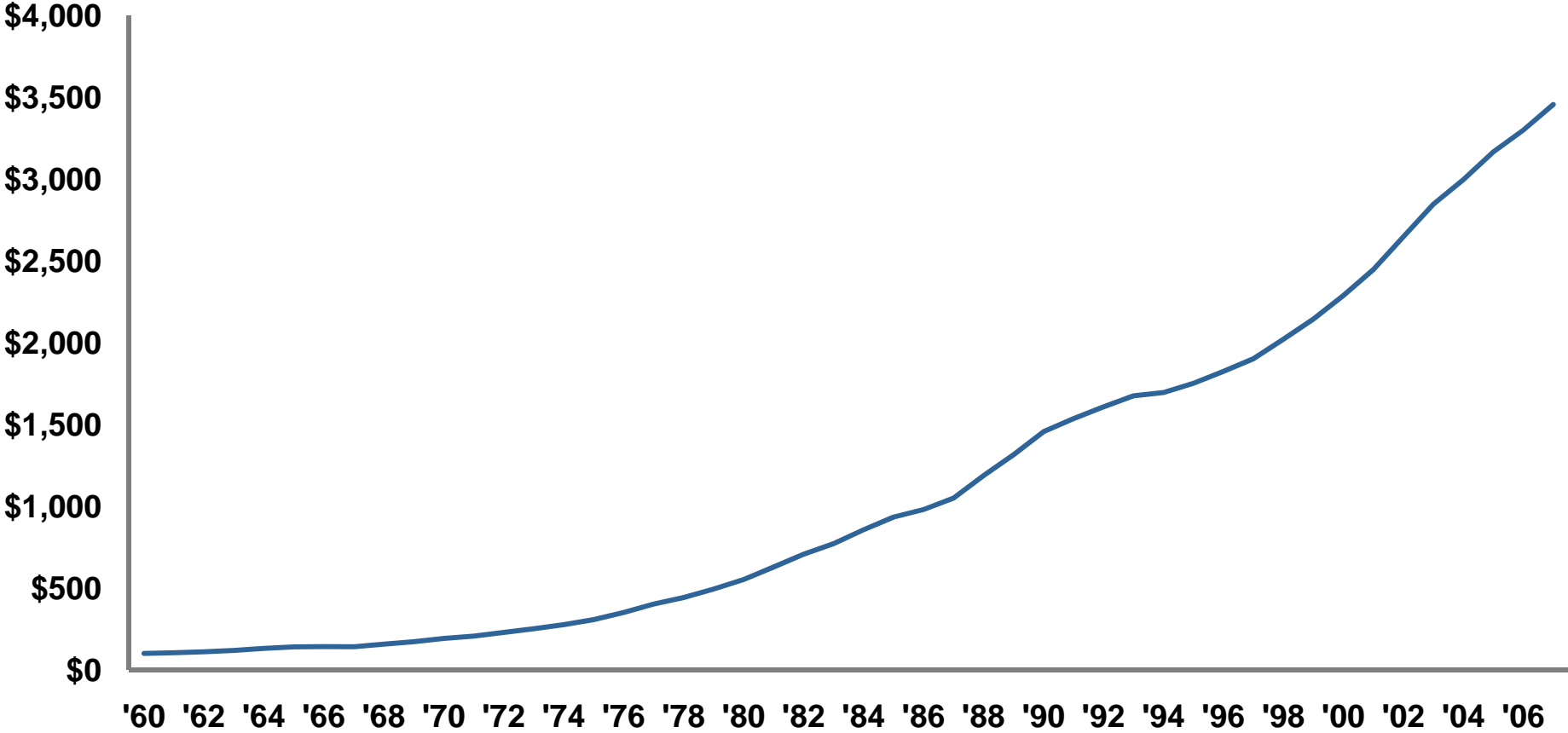
Trillions of Dollars, End of Period



Defined contribution plans include 403(b), 457, and private employer-sponsored plans (including 401(k))  
Source: Investment Company Institute



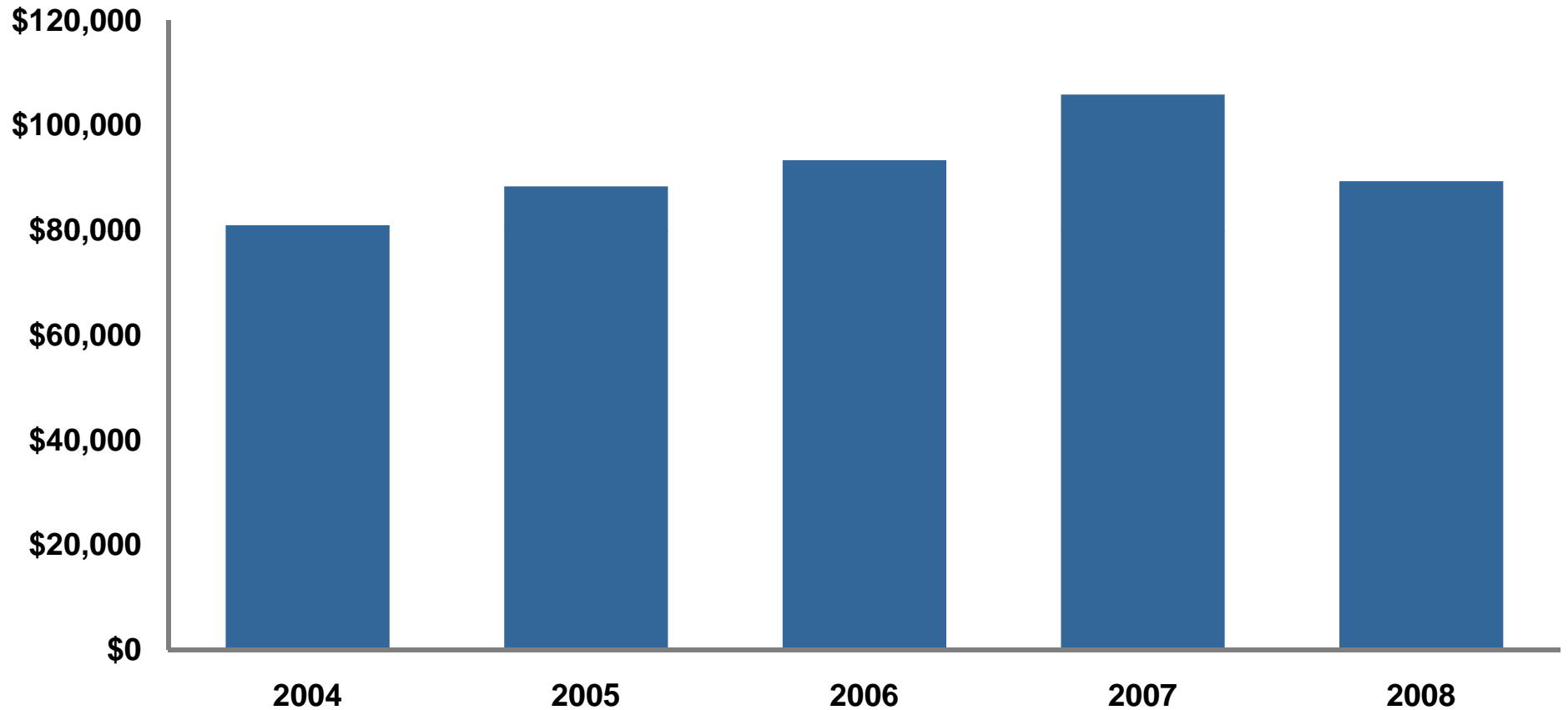
# Per Capita Consumer Spending on Medical Care Is Trending Higher



Source: Centers for Medicare and Medicaid Services (CMS)

# Retirement Accounts Have Suffered a Shock (But Are Still Above 2005 level)

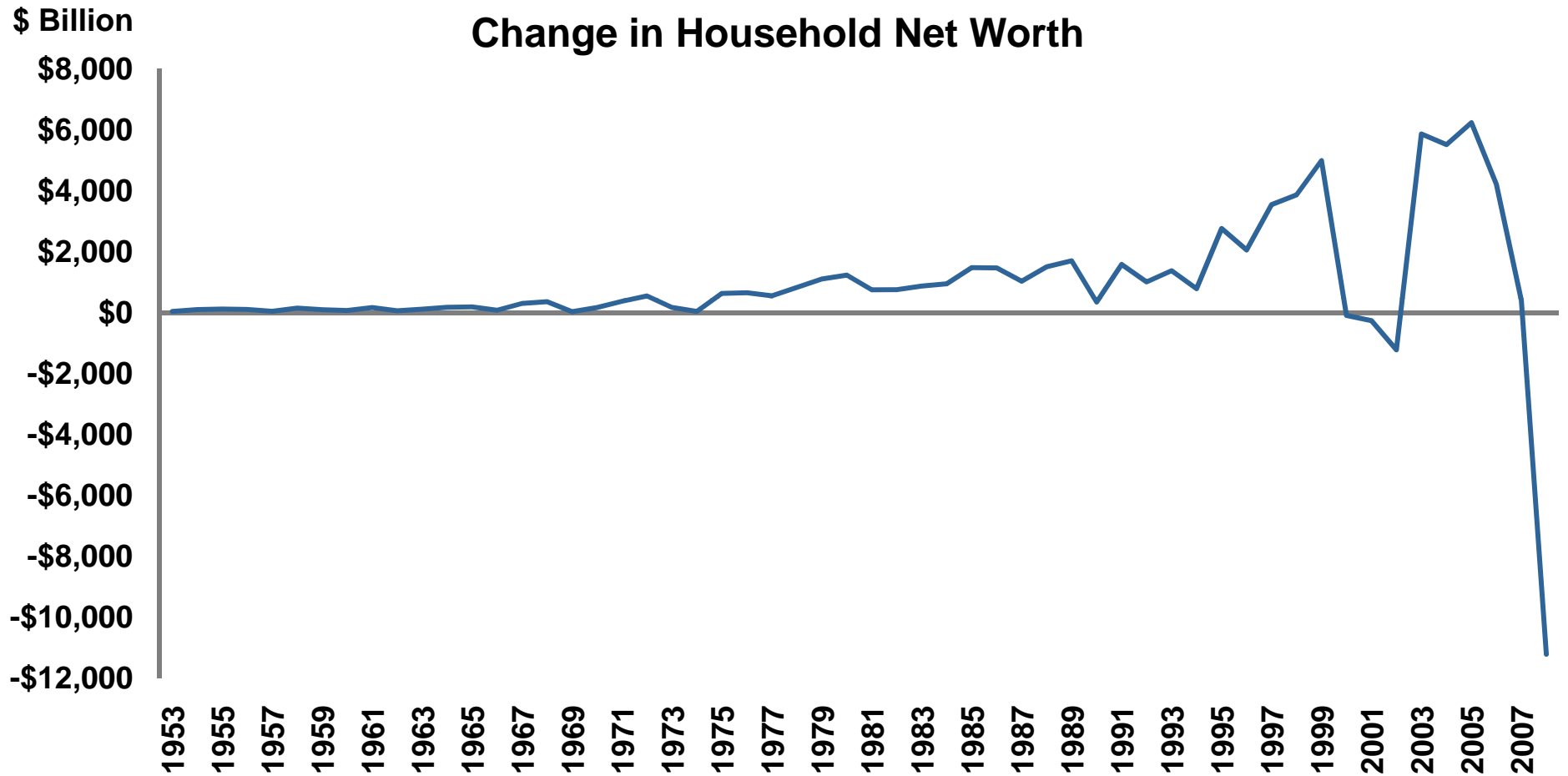
## Median Retirement Accounts of Household Age 50 and Older



Source: Richard W. Johnson, Mauricio Soto, and Sheila R. Zedlewski, "How is the Economic Turmoil Affecting Older Americans?" Urban Institute, October 2008

# Household Wealth

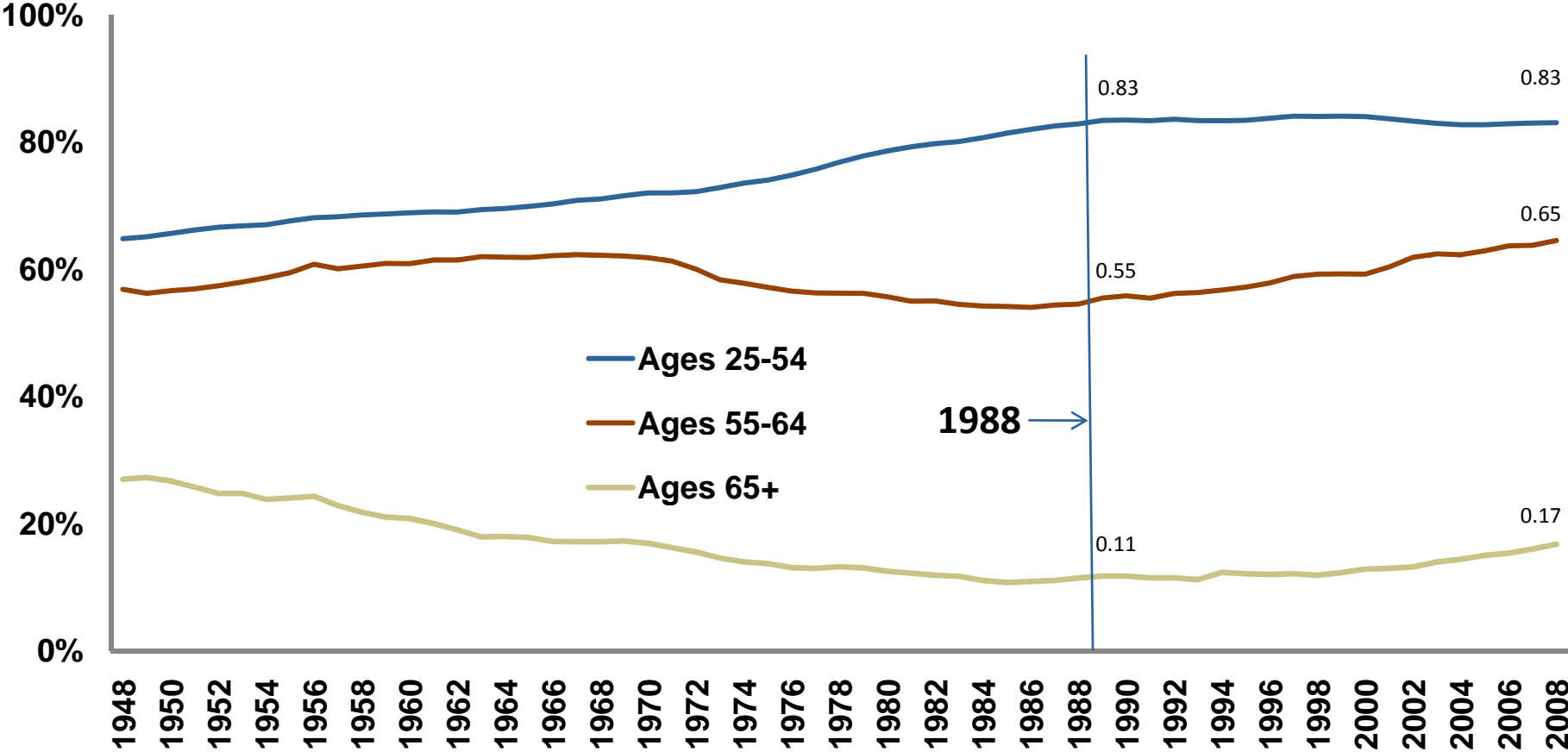
## Stocks, Bonds, Real Estate – Off the Cliff



Data include households and non profit organizations  
Source: Federal Reserve Board

# The Postponement of Retirement Began in the Late 1980s

Percent of the Working Age Population at Work or Looking for Work



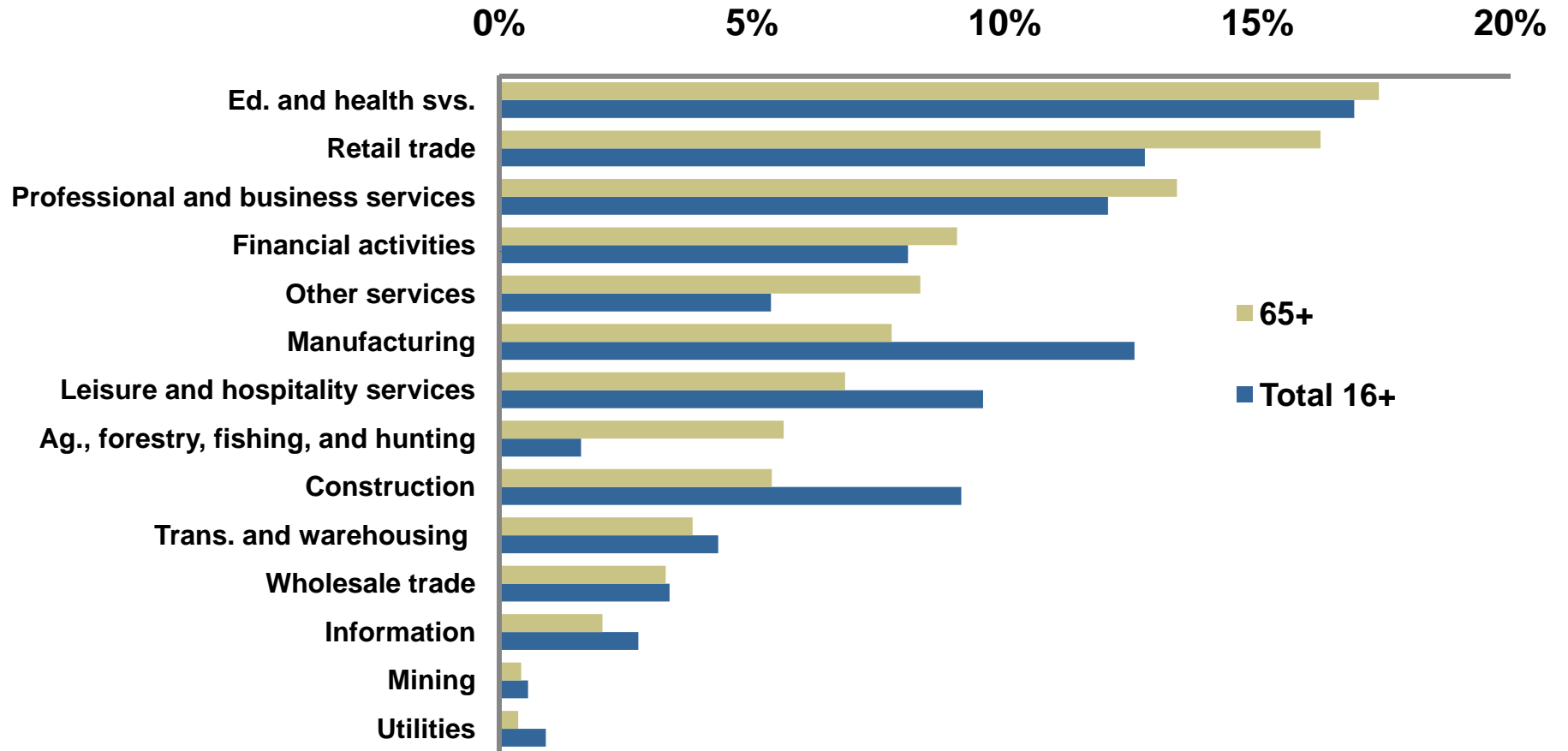
Source: U.S. Bureau of Labor Statistics

# Working Past Age 65

## Industries and Occupations

# Ed/Healthcare and Retail Trade Are Top Choices of Older Workers

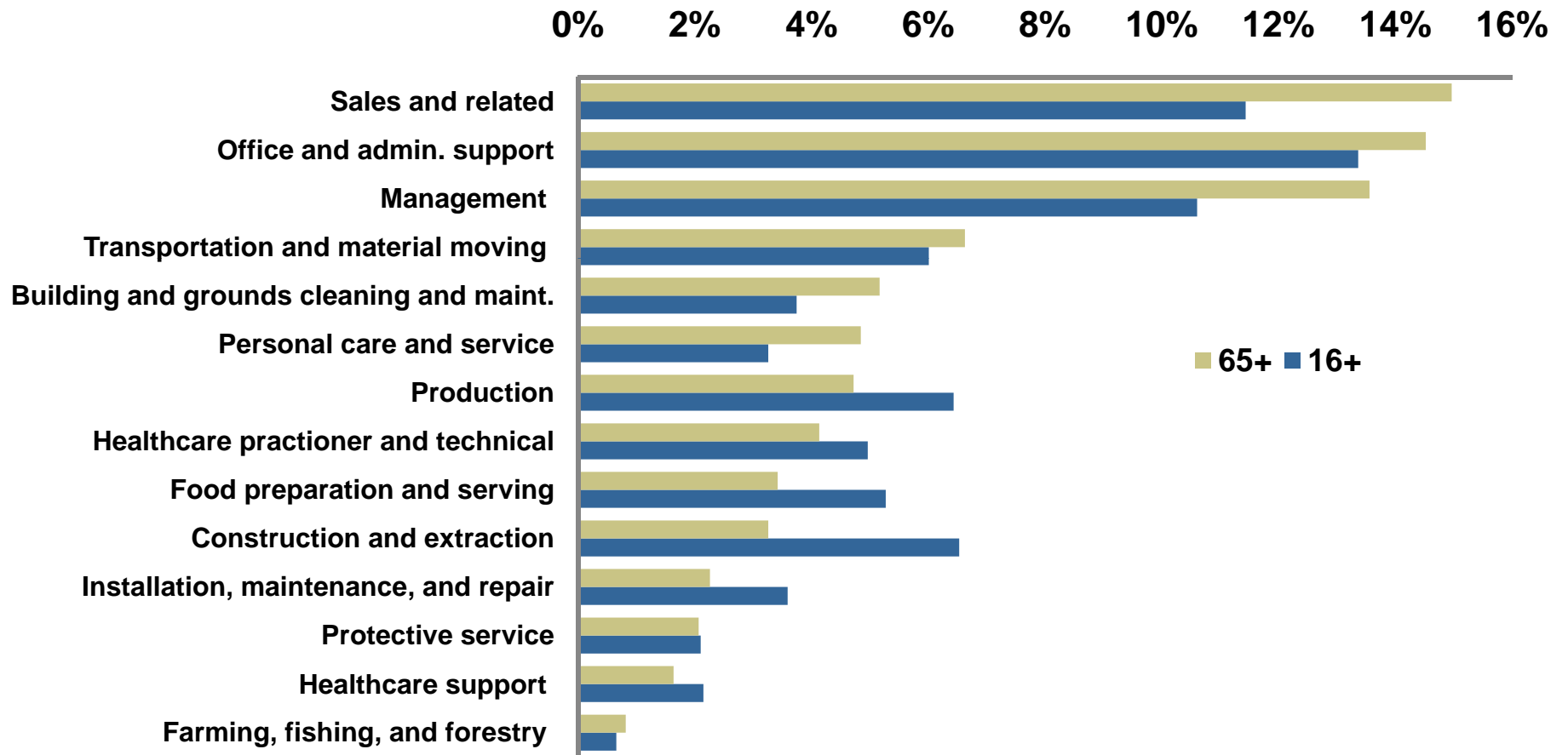
Employment Shares by Industry\*, Total 16+ and 65+



\* Excludes public administration, postal workers, and teachers in public education facilities  
 Source: U.S. Bureau of Labor Statistics

# Sales and Service Jobs Are Top Choices for Older Workers

Occupational Shares of Employment (Major Categories), 2007



Source: U.S. Bureau of Labor Statistics

# Working Past Age 65

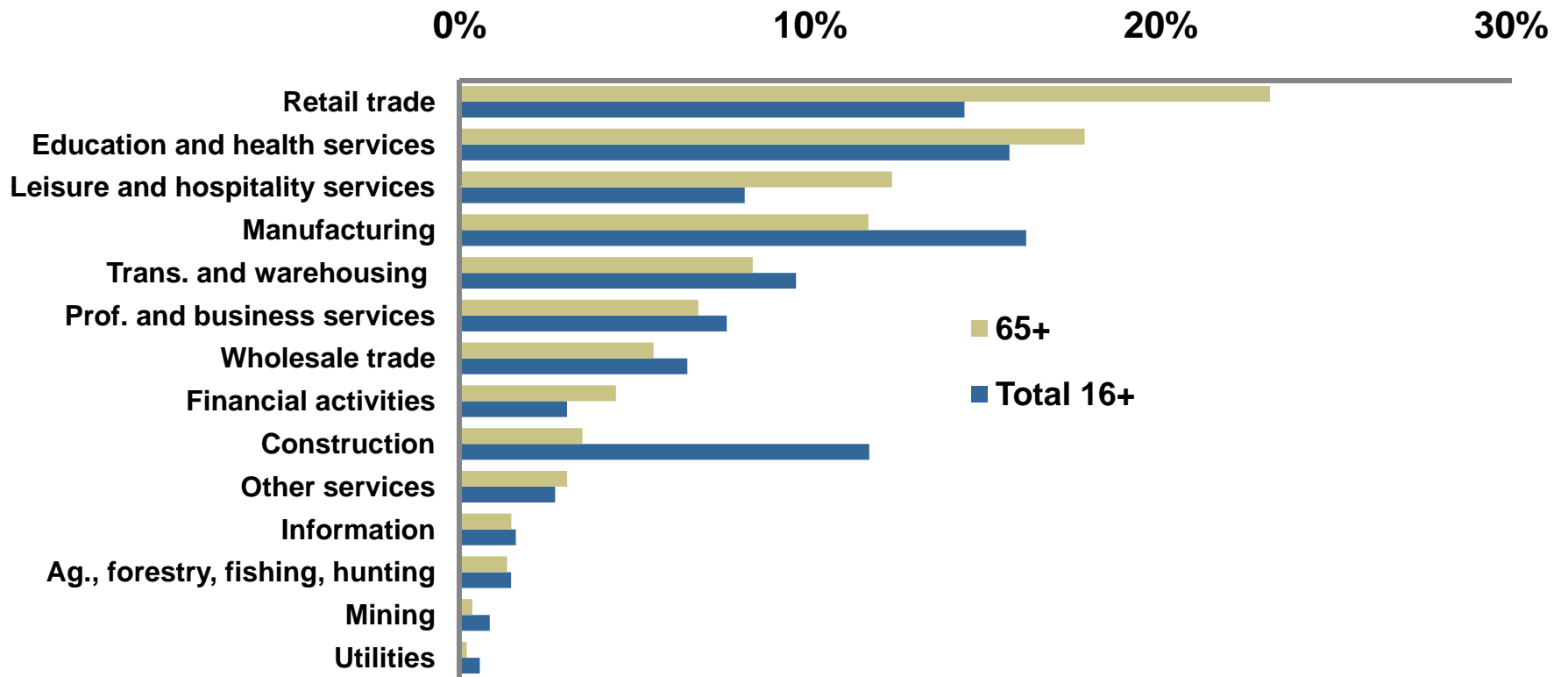
## **Workers Compensation Experience of Older Workers**

### Injury and Illness Shares



# Retail Trade Accounts for the Largest Share of Injury and Illness Cases for Older Workers (BLS)

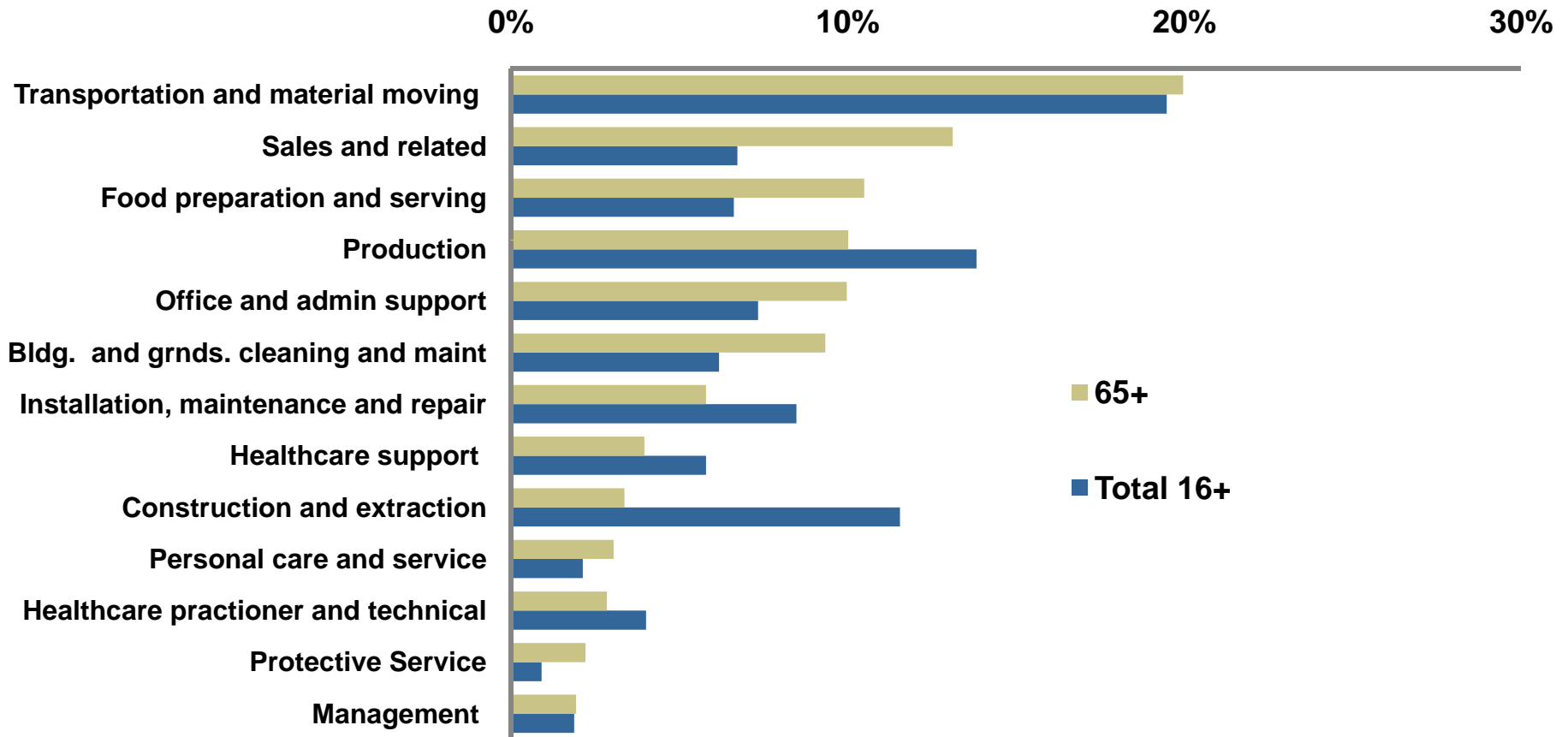
Percent of Cases by Industry, 2007



Source: U.S. Bureau of Labor Statistics

# Transport. Occupations Have the Largest Share of Injury/Illness Cases (BLS)

Percent of Cases by Occupation, 2007



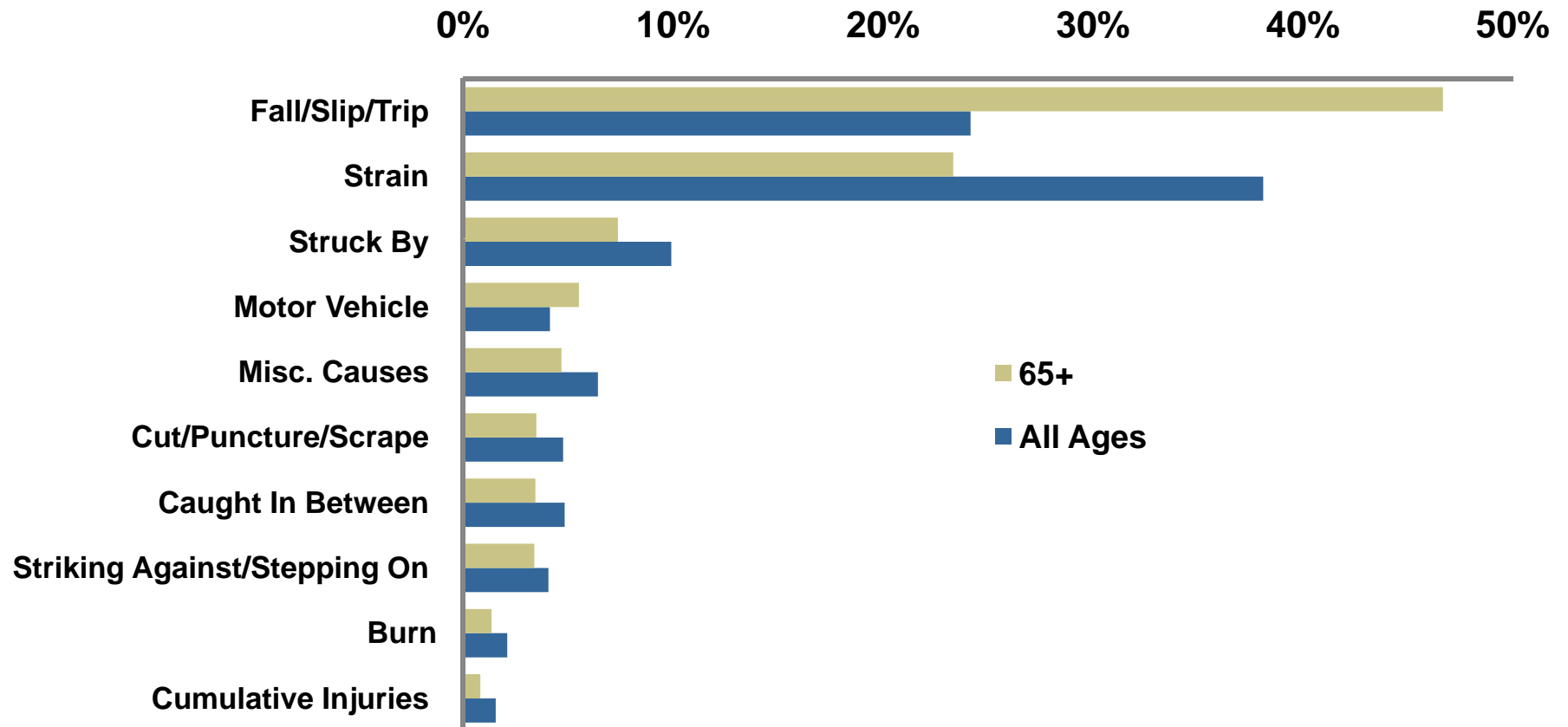
Source: U.S. Bureau of Labor Statistics

# Analyses Using NCCI Data

- Uses NCCI's Detailed Claim Information (DCI) database
- Data as of Second Report (18 months after date of injury)
- Based on average of data for 2000-2006

# Falls/Slips/Trips Dominate Workplace Injury Claims of Older Workers (NCCI)

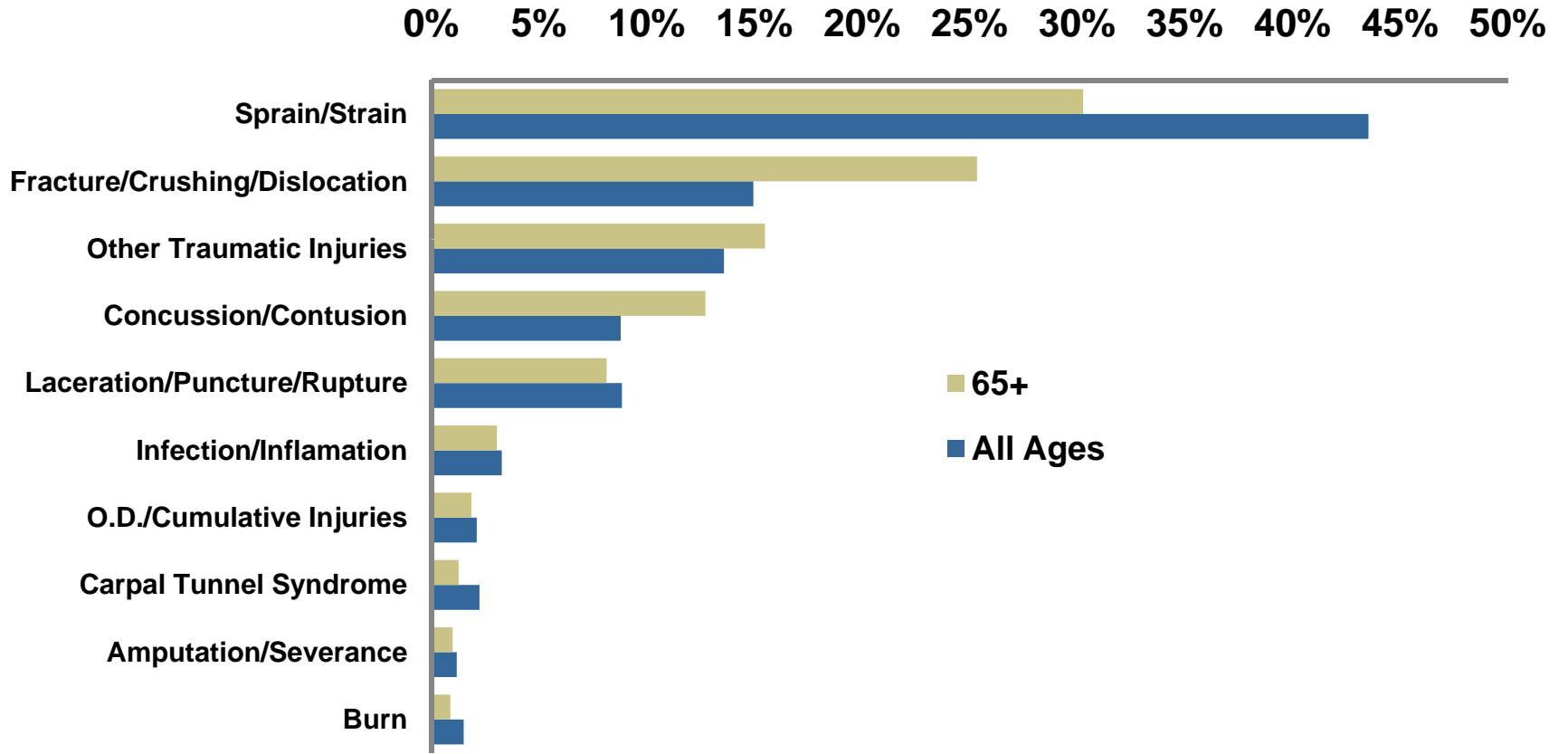
Share of Claims by Cause of Injury, 65+ vs. All Ages, 2000-2006



Source: NCCI

# Older Workers Have a High Share of Fractures Vs. All Workers (NCCI)

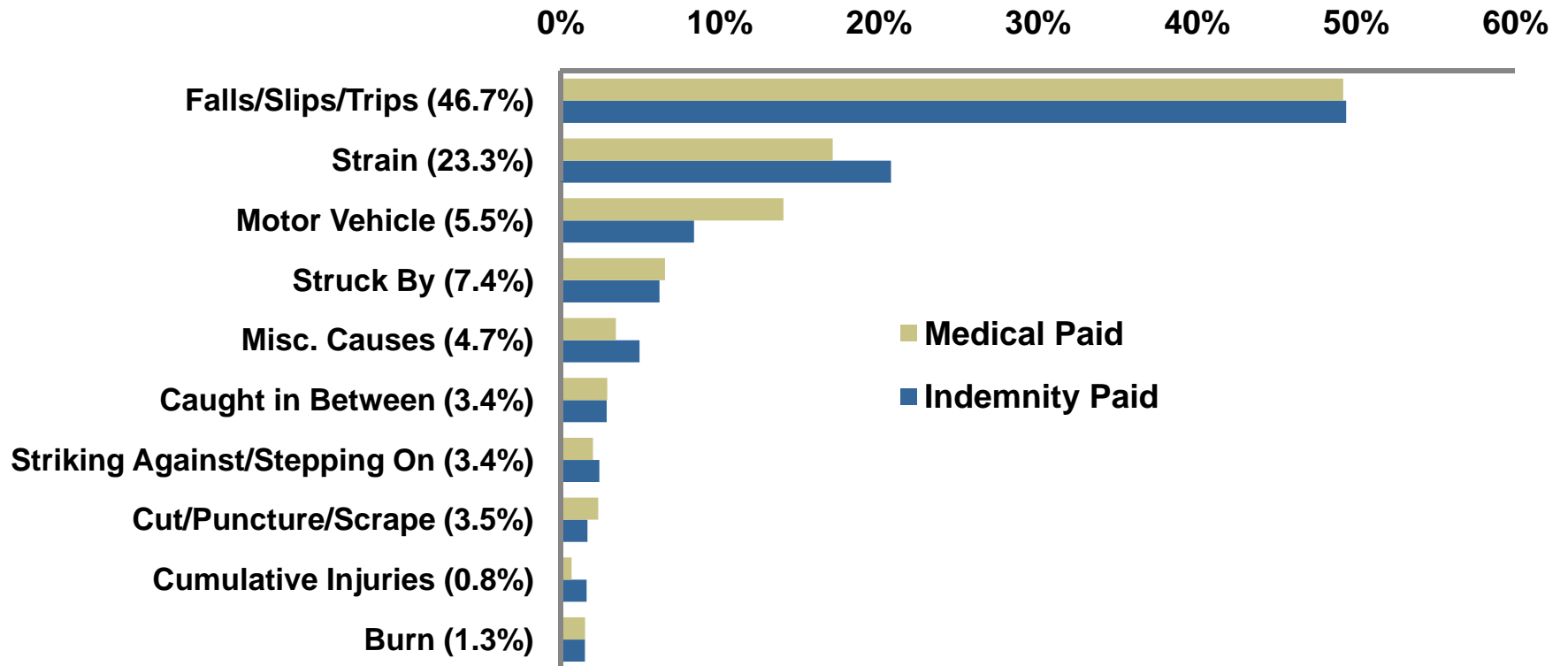
Share of Claims by Nature of Injury, 65+ vs. All Ages, 2000-2006



Source: NCCI

# Falls/Slips/Trips Account for the Largest Share of Indemnity and Medical Payments (NCCI)

Shares of Indem. and Med. Paid by Cause of Injury for Workers 65+, 2000-2006



Percent values displayed in parentheses represent share of claims from workers aged 65 and older.  
Source: NCCI

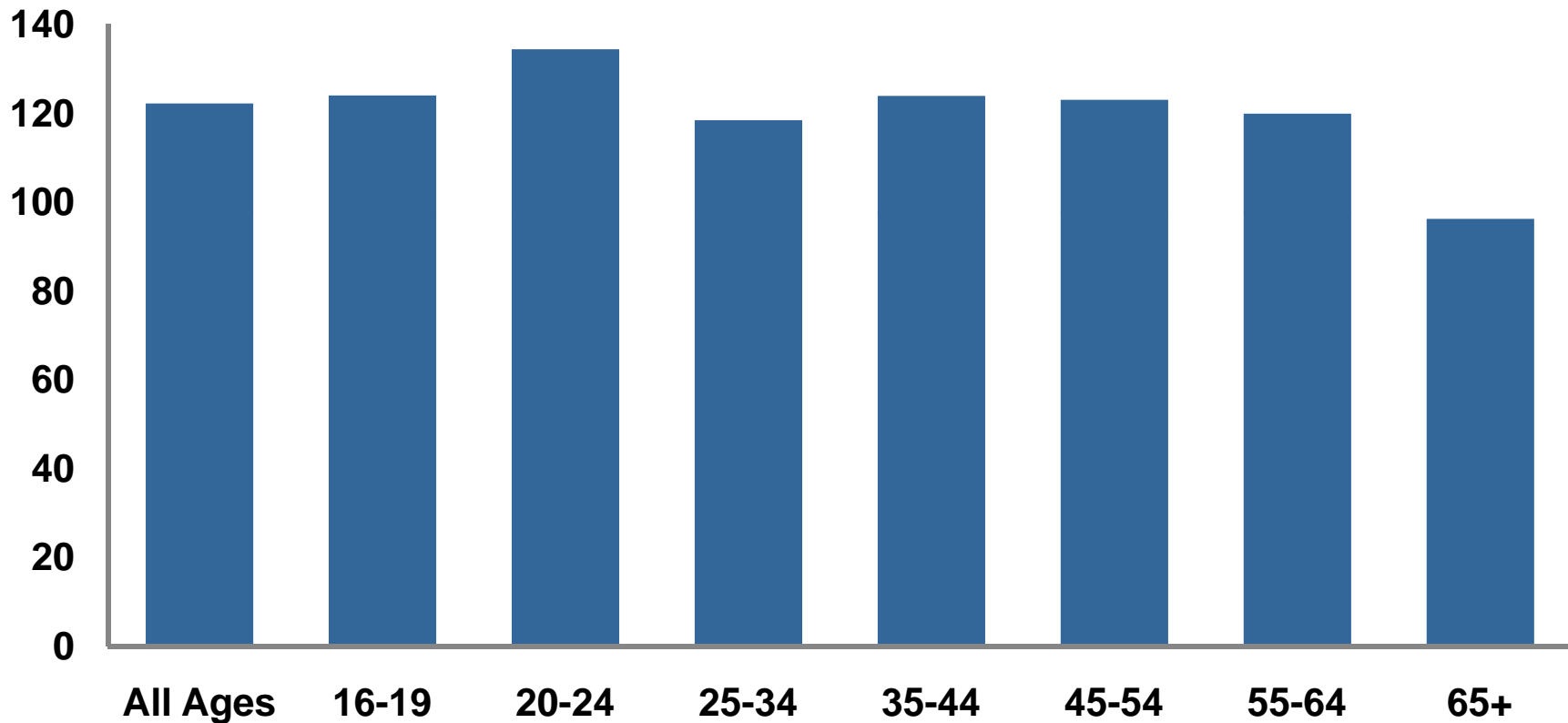
# Working Past Age 65

## **Workers Compensation Experience of Older Workers**

Incidence Rates (Frequency)

# Older Workers – Lower Frequency of Workplace Injuries (BLS)

**Injury and Illness Incidence Rates per 10,000 Full-Time Workers  
Private Industry, 2007**

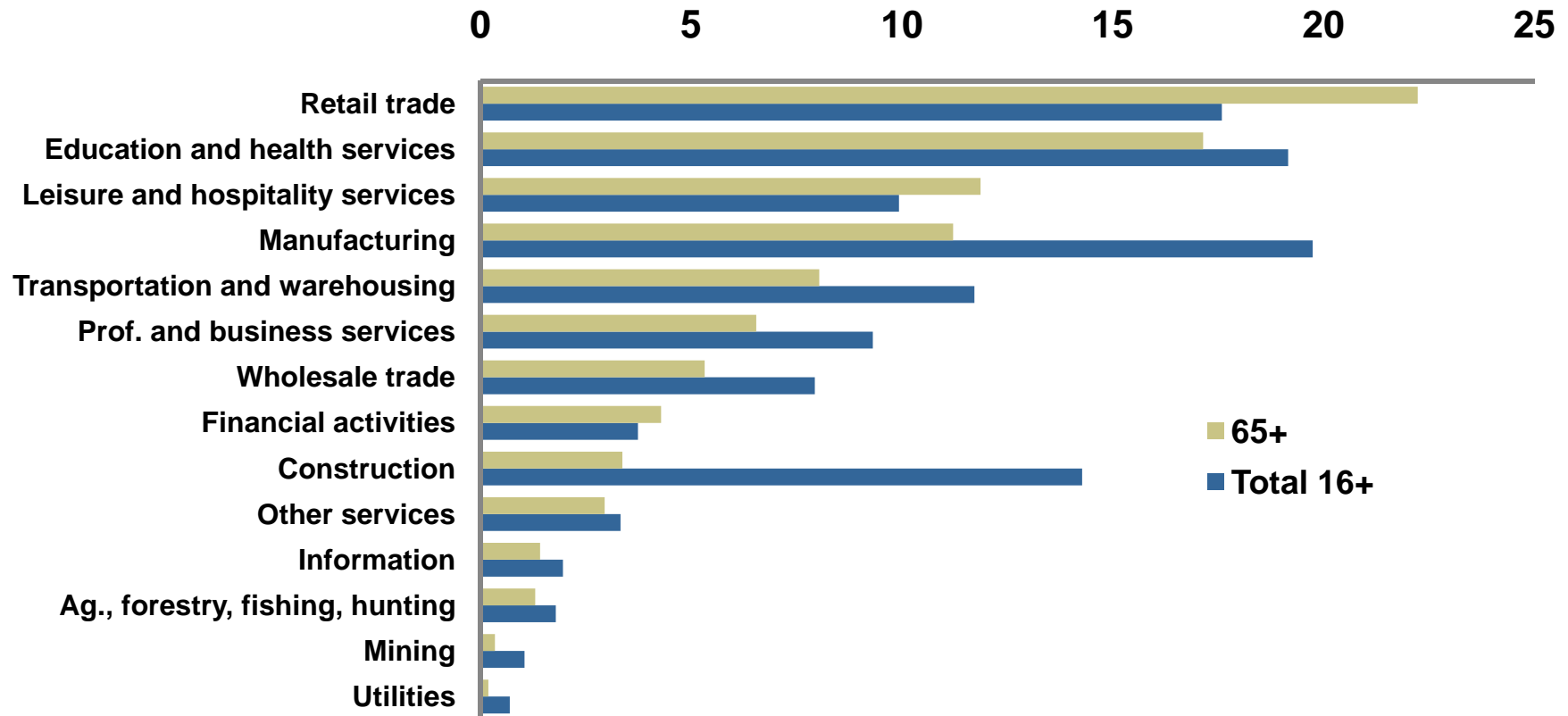


Source: U.S. Bureau of Labor Statistics



# Frequency Is Highest in the Retail Trade and Ed/Health Sectors (BLS\*)

**Injury and Illness Incidence Rates per 10,000 Full-Time Workers  
Private Industry, 2007**

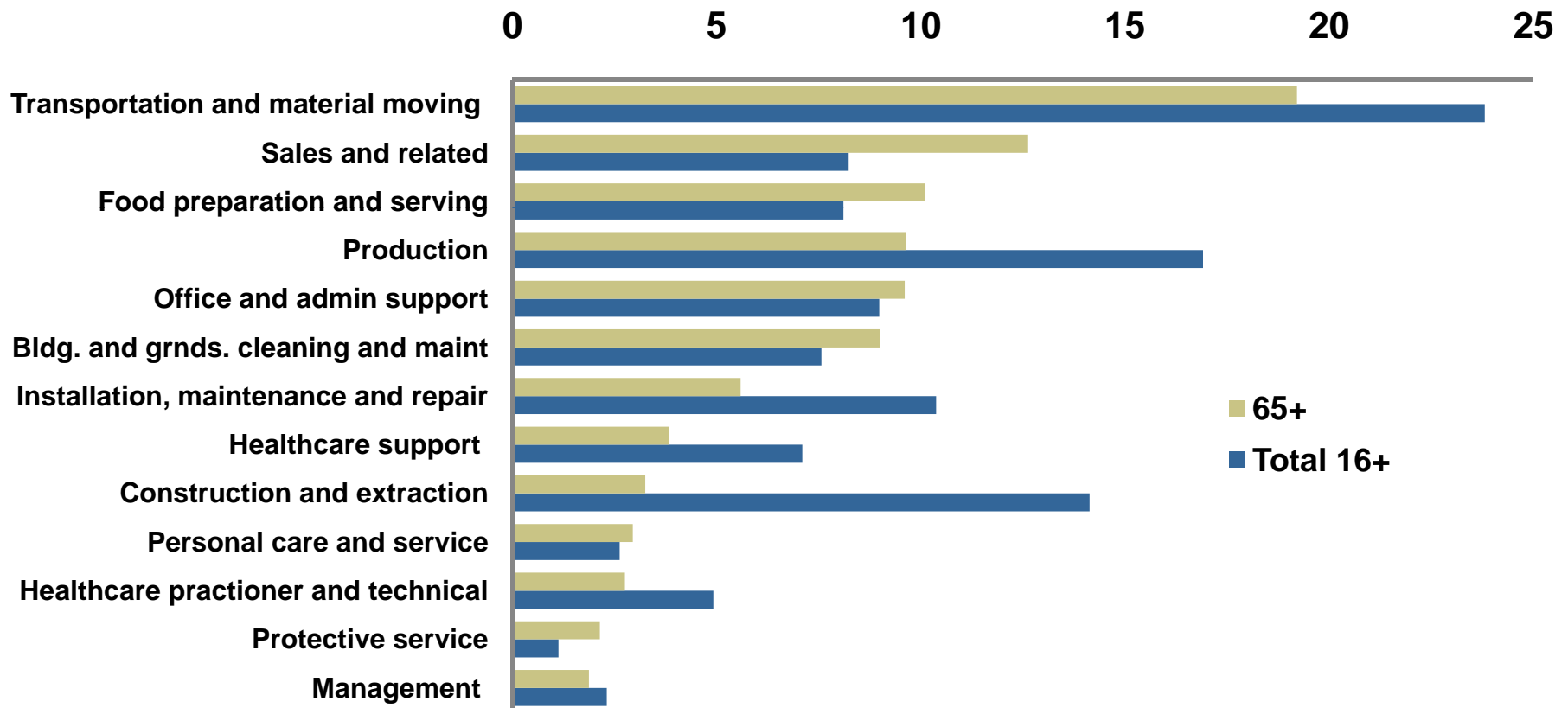


Source: NCCI

\*NCCI estimates using BLS data and methodology

# Frequency Is Highest in Transportation and Sales Occupations (BLS\*)

Injury and Illness Incidence Rates per 10,000 Full-Time Workers  
Private Industry, 2007



Source: NCCI

\*NCCI estimates using BLS data and methodology

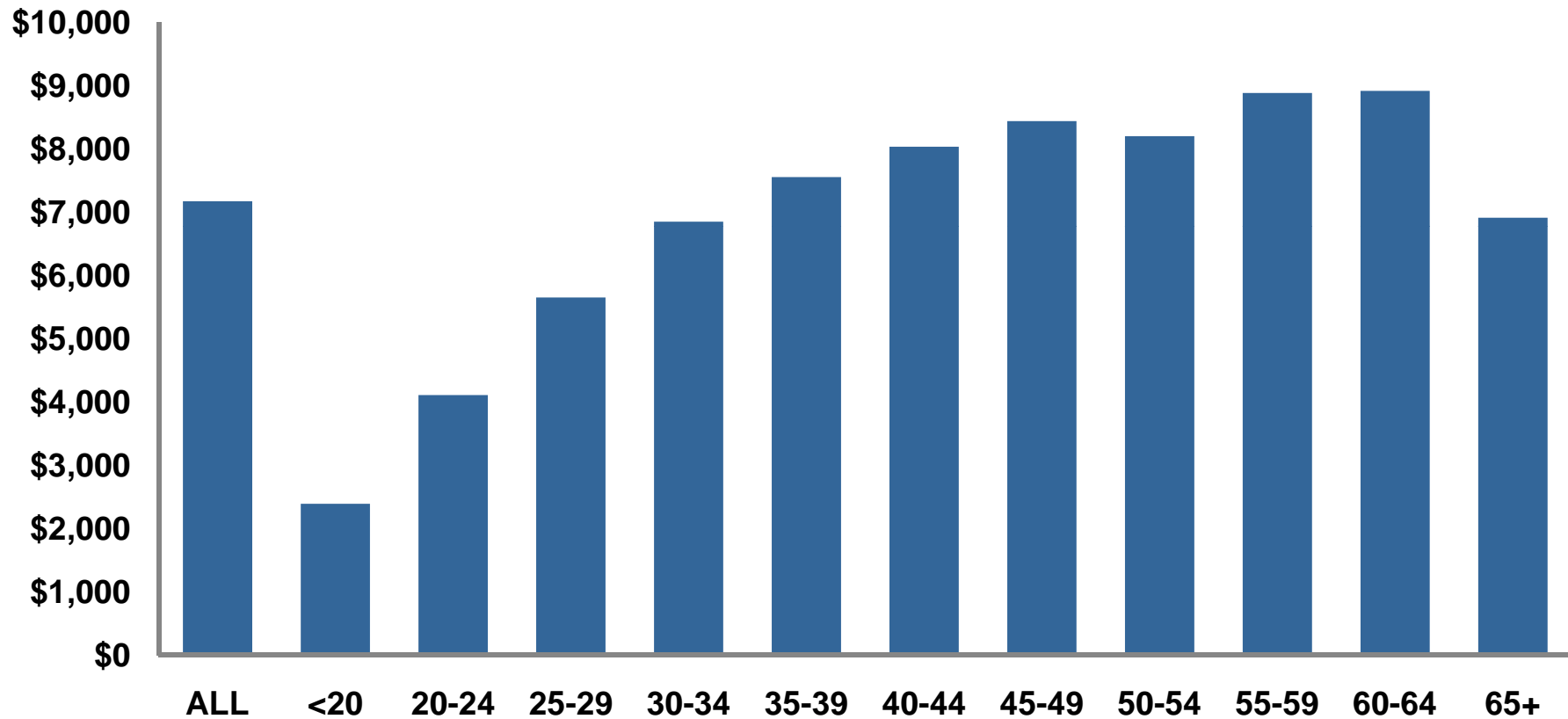
# Working Past Age 65

## **Workers Compensation Experience of Older Workers**

### Indemnity Costs

# Average Indemnity Paid per Claim Decreases for Workers 65 and Older (NCCI)

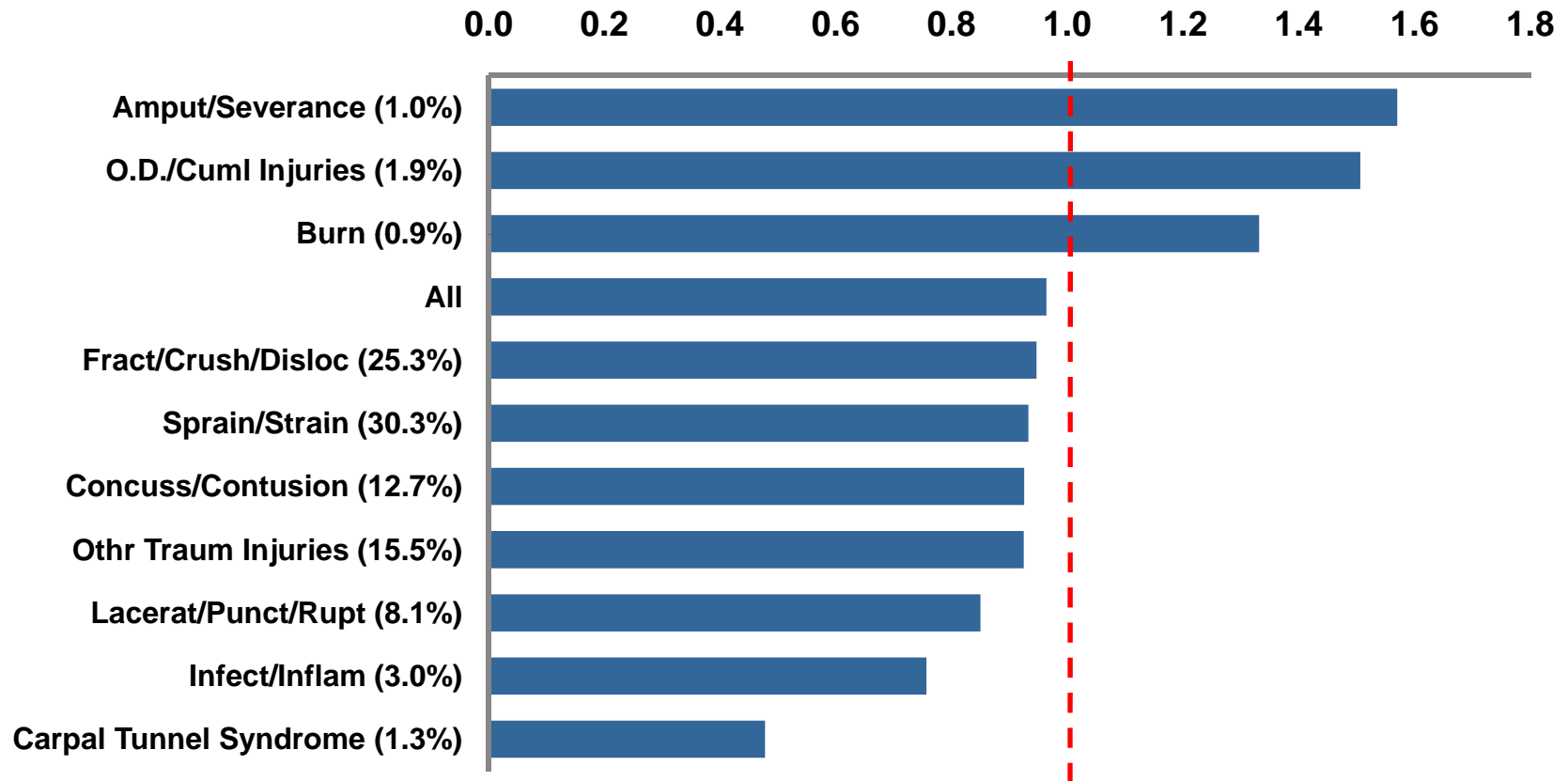
Based on Total Claims and Indemnity Payments in 2000-2006 \*



\* Data not adjusted for inflation  
Source: NCCI

# Indemnity Typically Costs Less for Workers 65 and Older (NCCI)

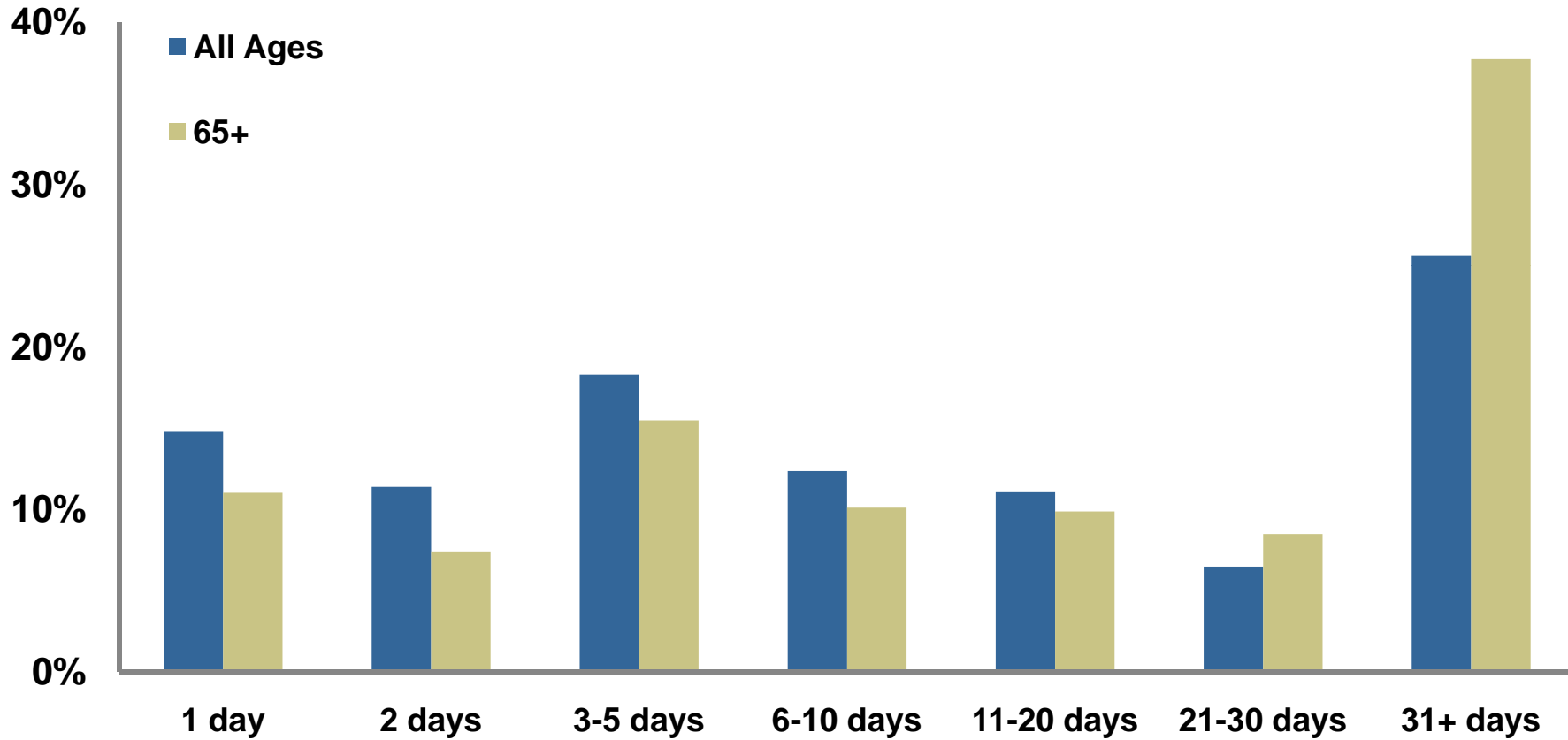
## Indemnity Paid per Claim Relativity by Nature of Injury, 65+ /All Ages



Percent values displayed in parentheses represent share of claims from workers aged 65 and older.  
Source: NCCI

# Older Workers Have A Higher Share of Long-Term Absences

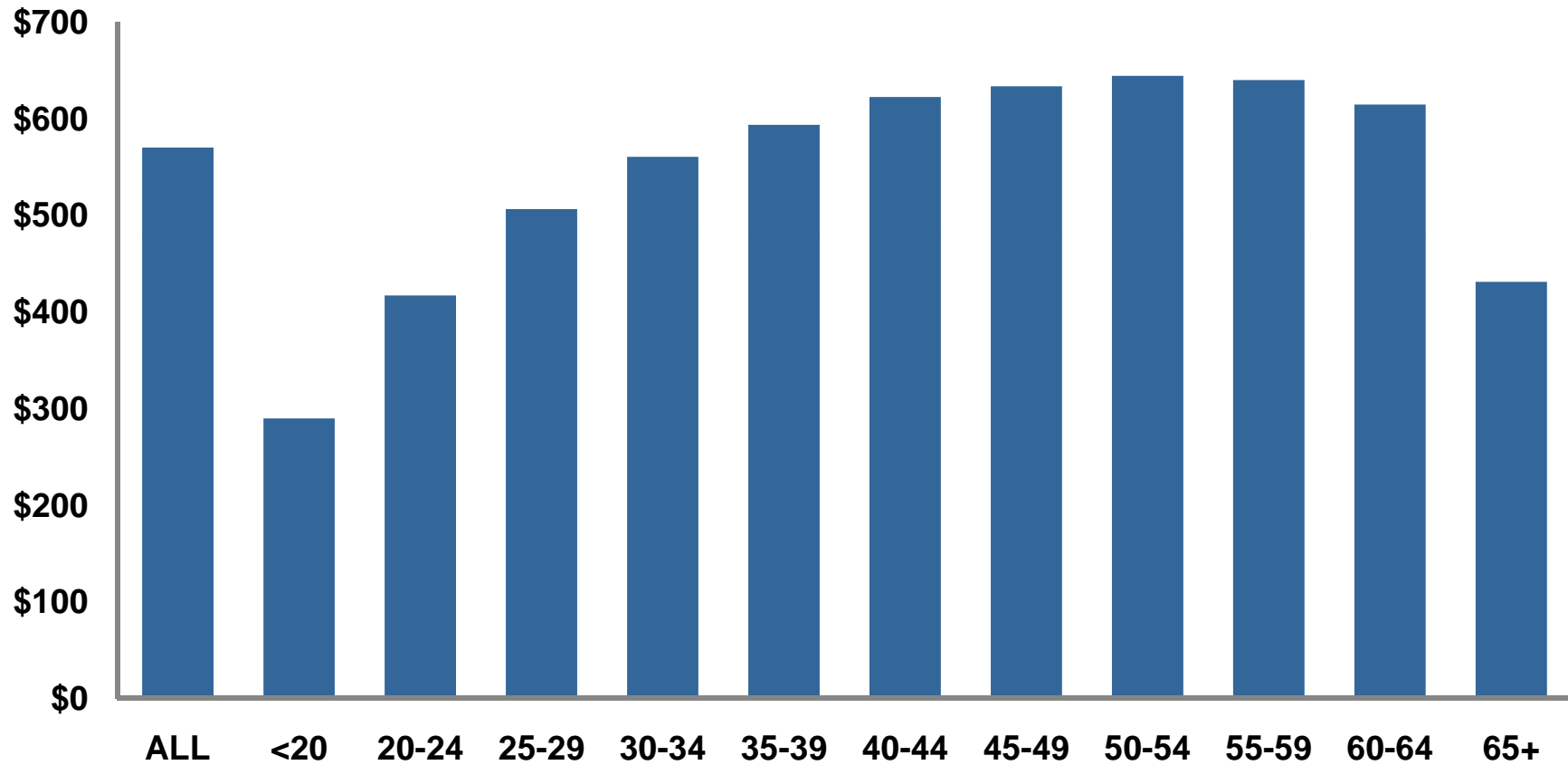
Percent Days Away From Work, All Ages and Age 65+, 2007



Source: U.S. Bureau of Labor Statistics

# Average Weekly Wage Decreases by Age of Worker

Pre-Injury Average Weekly Wage, Average, 2000-2006\*



\* Annual data not adjusted for inflation  
Source: NCCI

# Working Past Age 65

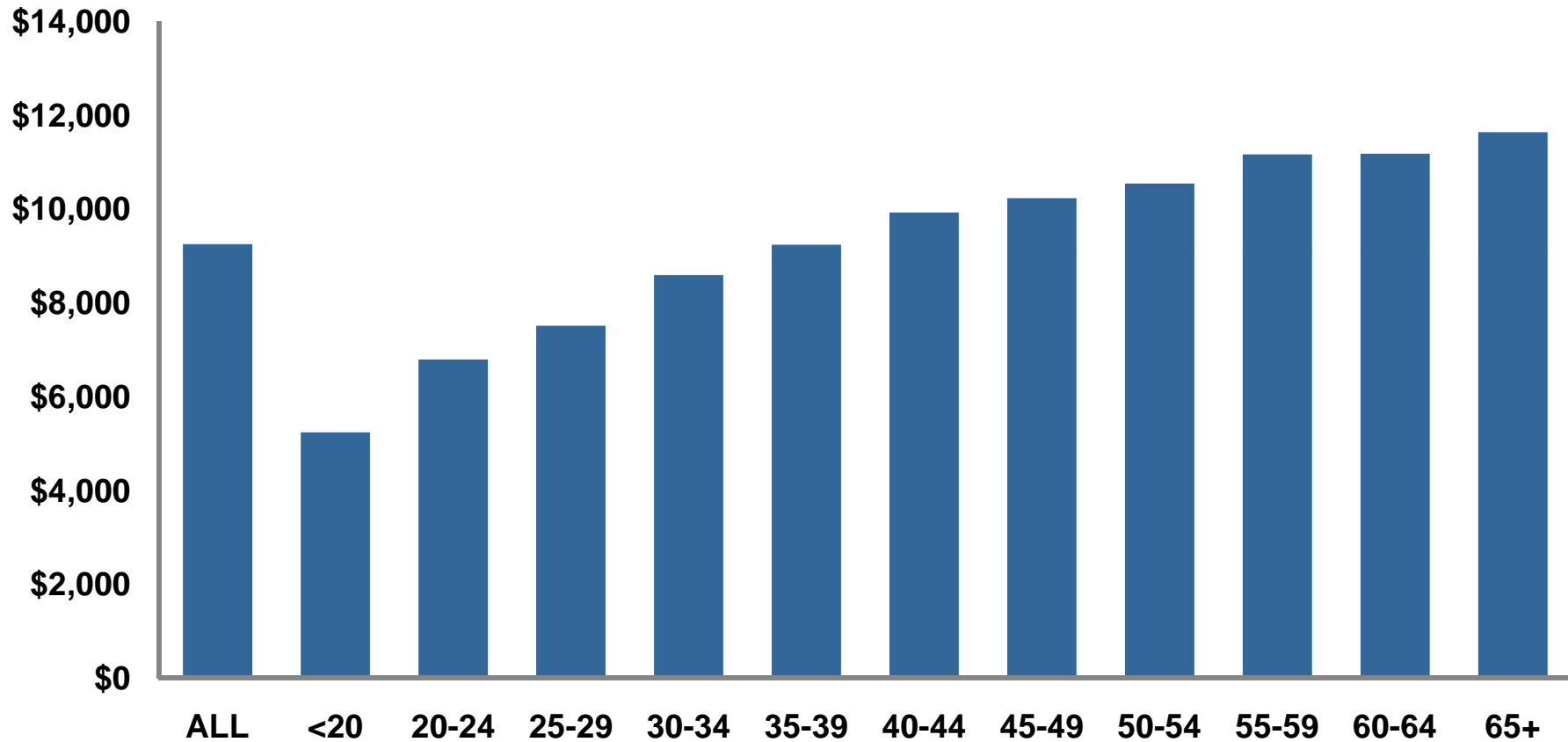
## **Workers Compensation Experience of Older Workers**

### Medical Costs



# Average Medical Paid per Claim Costs More For Workers 65 and Older (NCCI)

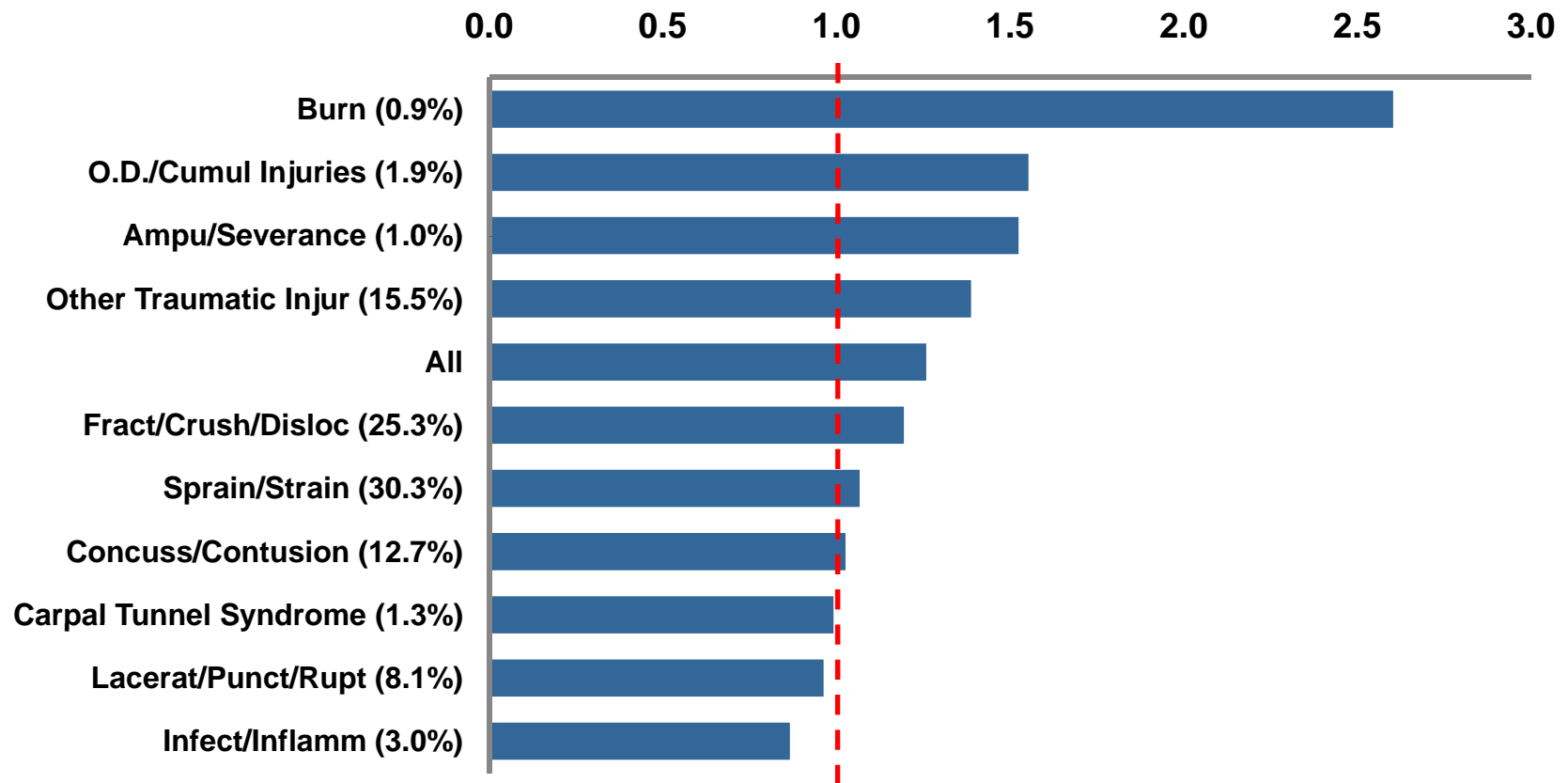
Based on Total Claims and Medical Payments in 2000-2006 \*



\* Data not adjusted for inflation  
Source: NCCI

# Medical Typically Costs More for Workers 65 and Older (NCCI)

Medical Paid per Claim Relativity by Nature of Injury, 65+/All Ages



Percent values displayed in parentheses represent share of claims from workers aged 65 and older.  
Source: NCCI

# Working Past Age 65

## Reducing the Exposure of Older Workers to Workplace Injuries

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Insights from the National Highway Traffic Safety Administration

# Challenges Facing Older Workers

## **Eyesight**

- Acuity: Direct ahead not as sharp
- Peripheral: lateral while looking ahead
- Adjustment to changes in light, glare, distance
- Depth perception: judging distance and speed of moving objects
- Color perception, contrast: objects with similar background

# Challenges Facing Older Workers

## **Muscular/Skeletal**

- Stiff joints and muscles, less flexibility
- Weaker muscles, less strength
- Diminished reaction time
- Less sensitive hearing

## **Mental/Neurological**

- Slower recognition/reaction time
- Less effective short-term memory
- More easily distracted by noise, sudden movements

# What Can Employers Do?

## **Reduce the Risk of Falls**

- Eyesight: appropriate lighting
- Muscular/skeletal: slip-resistant floors, hand rails
- Neurological: noise reduction, hand rails

## **Provide Information/Support**

- Common health problems
- Exercise programs

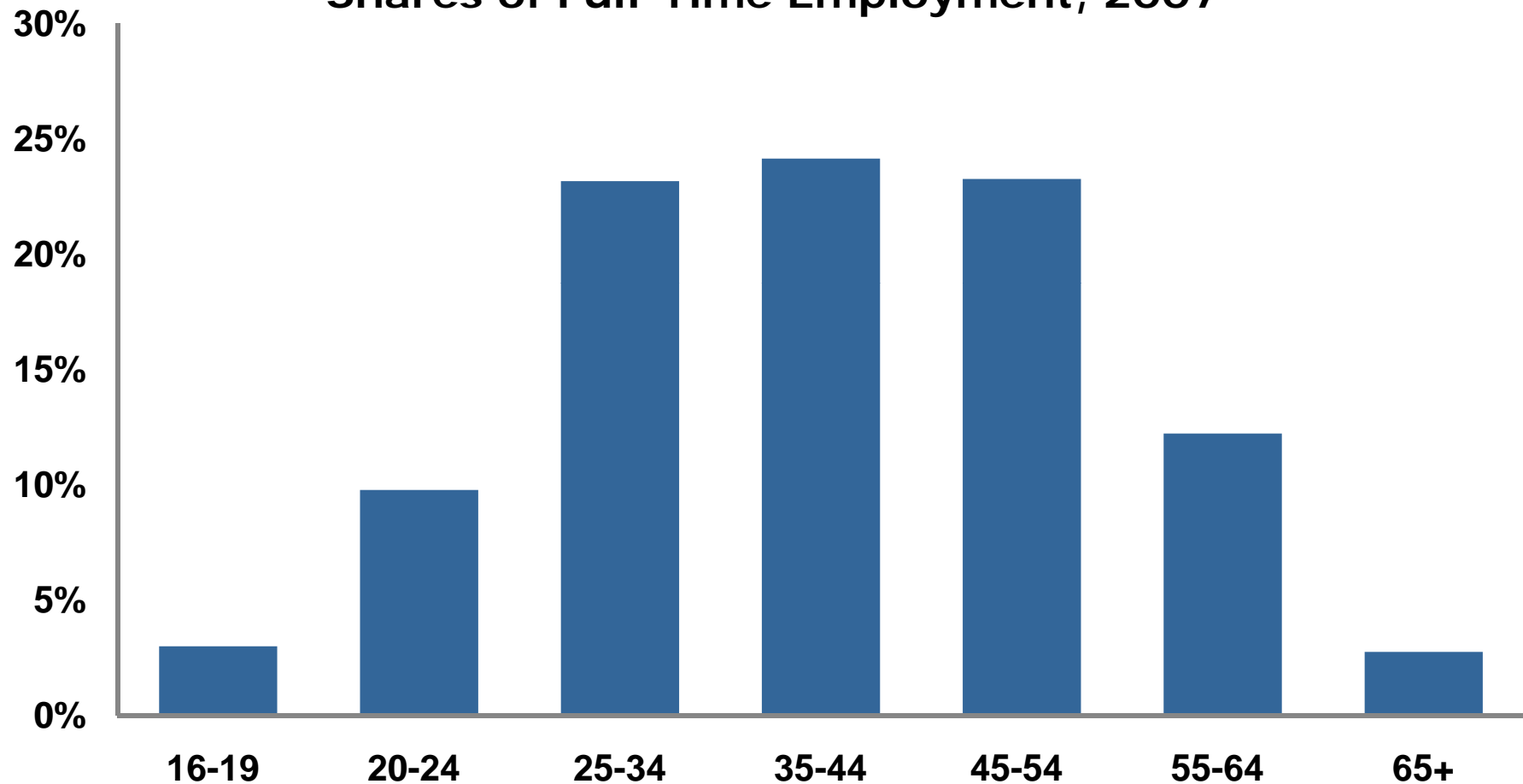
# **Will the Next Boom Be in Workers 65 and Older?**

## **Implications of the Exposure Due to More Older Workers**

How Great a Cost Concern?

# Workers 65+ Represent a Small Share of Private Employment

Shares of Full-Time Employment, 2007

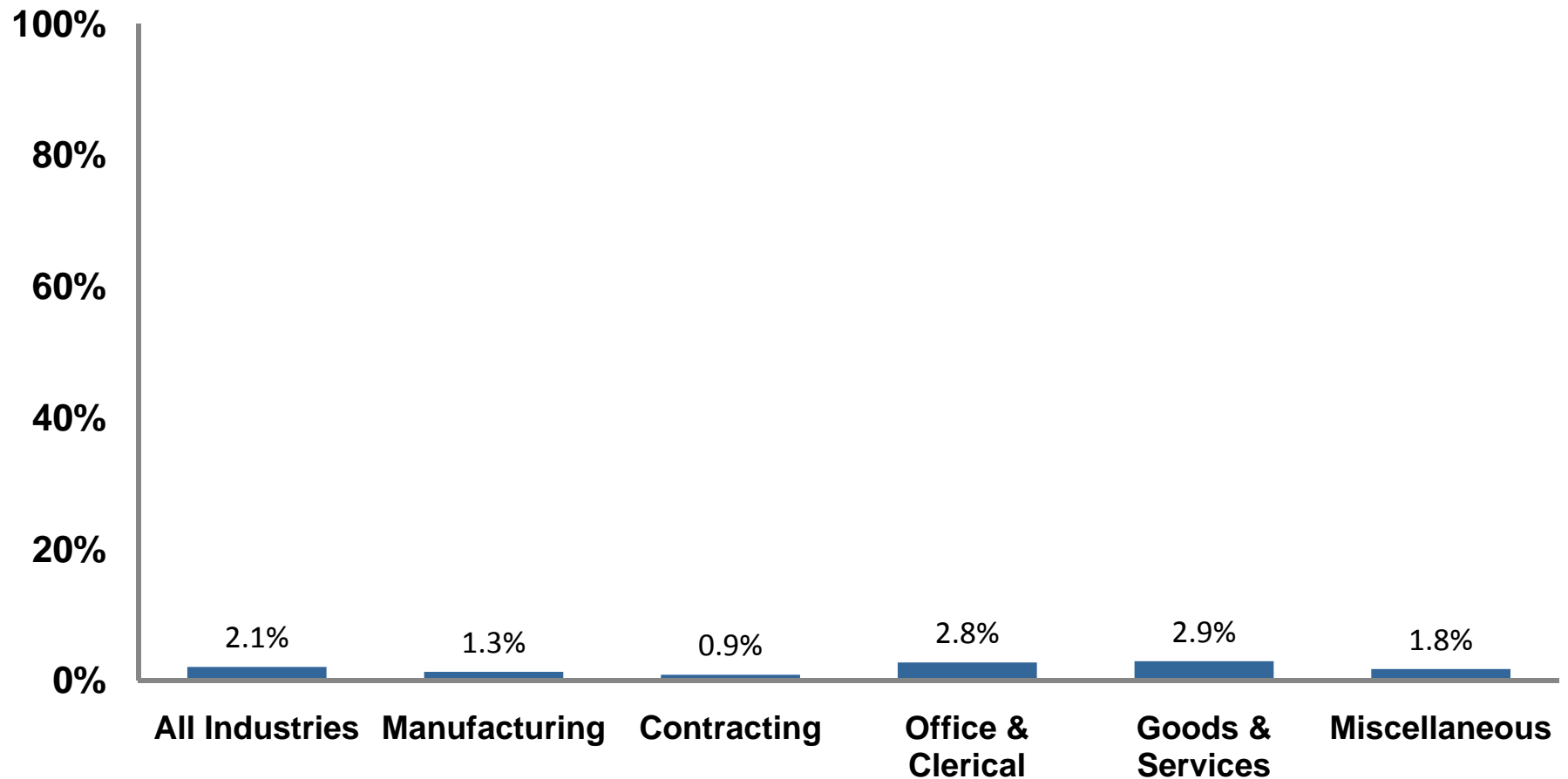


Source: U.S. Bureau of Labor Statistics



# Workers 65+ Represent a Small Share of Total Claims Within Each of NCCI's Industry Groups

2000-2006



Source: NCCI

# Working Past Age 65 - Key Takeaways

- Why More Older Workers?
  - Better Health
  - Workplace Changes
  - Financial Incentives
  - Financial Necessity
- Workplace Characteristics of Older Workers
  - Service-oriented: Especially Retail Trade
- Workers Compensation Experience of Older Workers
  - Slips, Trips, & Falls
  - Lower Frequency
  - Lower Indemnity
  - Higher Medical
- Implications for the Future of Workers Compensation
  - Safety/Loss Prevention: Environmental Changes to Reduce Falls
  - Cost Implications: Minimal

# Sources of Demographic Data Relating to Workers Compensation

# Source of Demographic Data Relating to Workers Compensation

- **NCCI** Detailed Claim Information database
- **NCCI** new Medical Call
- **U. S. Bureau of Labor Statistics** (for injury and illness cases and frequency, by age of worker – visit the BLS website at [www.bls.gov](http://www.bls.gov))

# DCI

- DCI is Detailed Claim Information
- DCI is collected for a stratified random sample of approximately 50,000 claims per year
- Applies to all NCCI states and participating independent bureau states
- First reports are for claims reported to insurer after 6 months (will be after 18 months in the revised DCI)
- For upcoming DCI revision, first reports are for claims reported to insurer in September 2009, to be valued in March 2011 and reported to NCCI by June 2011

# Some Data Elements Unique to DCI

- Indemnity payments by benefit type
- Average weekly wage
- Return-to-work date and type of return-to-work
- Date of MMI
- Lump sum information
- Attorney indicator
- Controverted case indicator

# New Medical Data Call

- Beginning late next year, NCCI will collect medical transaction data from just about every carrier writing WC for all 35 NCCI states, plus 5 independent bureau states (to date)

# Medical Call Data Elements

- Carrier Code, Policy Number Identifier, Policy Effective Date, Claim Number Identifier, Transaction Code
- Jurisdiction State Code, Claimant Gender Code, Birth Year, Accident/Injury Date
- Transaction Date, Bill Identification Number, Line Identification Number
- Service Date, Service From Date, Service To Date
- Paid Procedure Code, Paid Procedure Code Modifier
- Amount Charged by Provider, Paid Amount
- Primary ICD9 Diagnostic Code, Secondary ICD9 Diagnostic Code
- Provider Type Code, Provider Identification Number, Provider ZIP Code
- Network Service Code
- Quantity/Number of Units per Procedure Code
- Place of Service Code
- Secondary Procedure Code



# Timeline

- Internal discussion of need for more data began in 2005
- Final proposal in early 2007
- Board approval in October 2007
- Detailed specifications and manuals issued in 2008
- Initial reporting will be for medical transactions occurring in 3rd Q 2010, which are due to be reported to NCCI in the following quarter

**???** Questions **???**