

# **Economic and Demographic Trends in Disability Insurance**

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**Society of Actuaries Spring Meeting  
Session 067**

**Mike Temple  
Rick Leavitt**

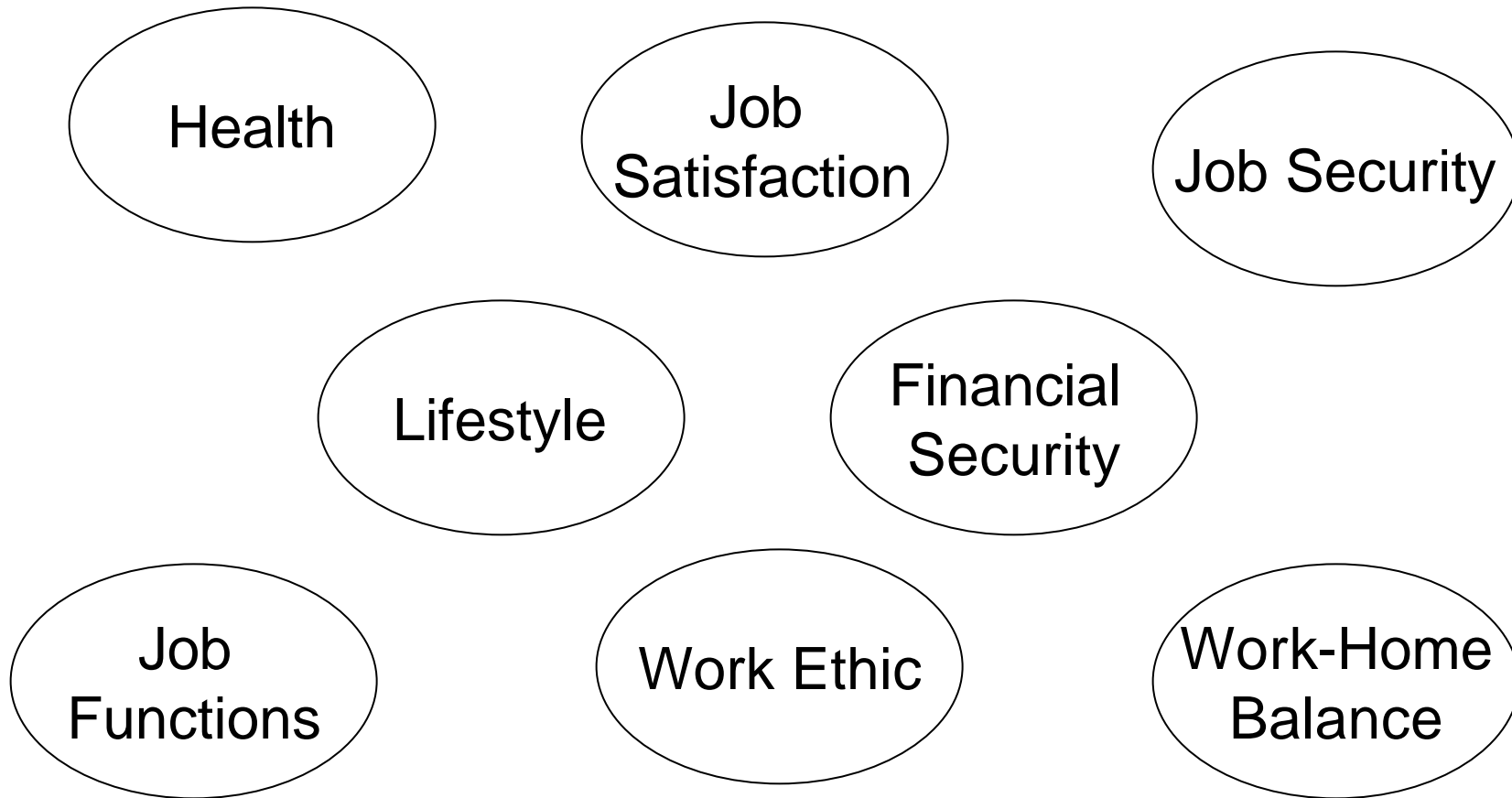
# Disability Trends

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## Agenda

- **Economic Trends**
- **Labor and Demographic Trends**
- **Summary**
- **Discussion/Comments**

# The Disability Decision



# The Actuarial Decision



**Premium = Incidence \* Claim Size \* Duration / Investment Return**

Age  
Gender  
Occupation  
Elim  
Diagnosis  
Industry  
Region

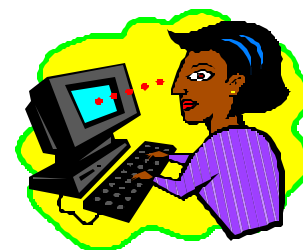
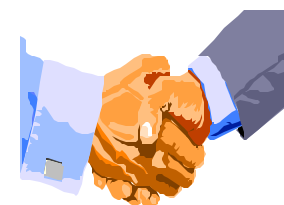
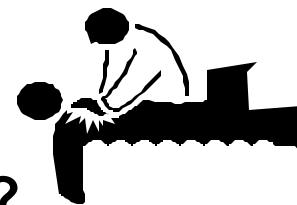
Salary  
Benefit Pct  
Social Security  
State Plans

Age  
Gender  
Plan Design  
Diagnosis

Discount Rate

# Do We Capture the “Desired Information?”

- **Health**                      **Age, Gender, Occupation, ????**
- **Job Satisfaction**            **Industry, Occupation, ????**
- **Job Security**                **Industry, Occupation, Region,  
????**
- **Job Functions**              **Occupation, ????**



# Do We Capture the “Desired Information?”



- **Work Ethic**                      **Years worked, ????**
- **Financial Stability**              **Salary, ????**
- **Lifestyle**                      **Region, Industry, Occupation, Age,  
Gender, ????**
- **Work-Home Balance**              **Age, Gender, ????**

# Need External Indicators

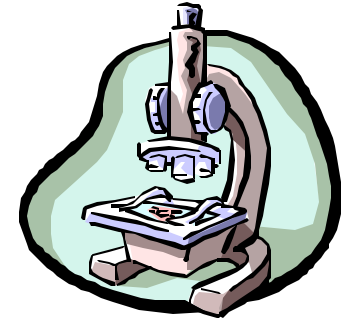
- **Economic**



- **Demographic**

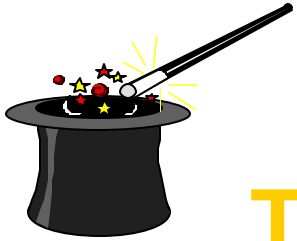


- **Medical**



- **Employee Attitudes**





# The Actuary vs The Underwriter



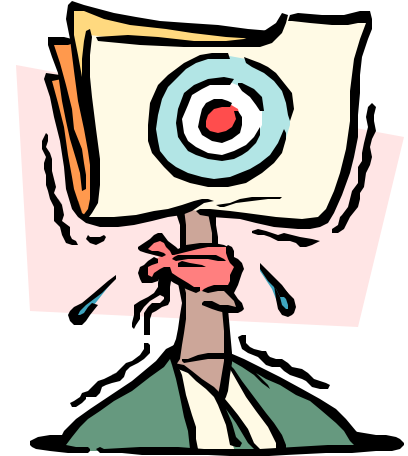
- **Aggregate Information**
- **Segmented by Rating Variables**
- **Needs Industry Wide Statistics**
  - **Employment Growth**
  - **Unemployment**
  - **Mortality Trends**
  - **Interest Rates & Inflation**
  - **Social Security Practices**
- **Info that Pertains to the case**
- **Inside Information**
  - **D&B Reports**
  - **Corporate Policies**
  - **Wellness Programs**
  - **Alternate Work Schedules**
  - **On site Rehab facilities**

# Sources of Information

- **Bureau of Labor Statistics**
- **US Census**
- **Consumer Surveys (e.g. Roper Starch, etc.)**
- **Industry Publications:(e.g. Business & Health)**
- **Other Government Agencies: (SSA, NIH,etc.)**
- **Financial Forecast Center**



# Societal Trends...



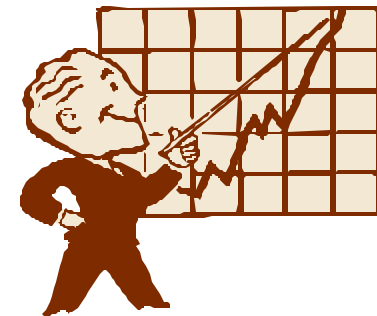
- **Americans report increasing stress**
- **41% of children <5 years attend 35 or more hours of non parental care each week.**
- **Americans aged 65 and older will go from one in eight today to one in five in about 30 years.**
- **Job Satisfaction down 20% since 1993**
- **Worker's compensation claims for "mental stress" in California rose from 200-700% in the 1980s**
- **The US is the only industrialized country where work hours are increasing**
- **Aging Population: By 2005, workers aged 45-65 will increase from 29-38% (this group produces highest claim rates)**

# **Societal Trends Predictions for 2039**

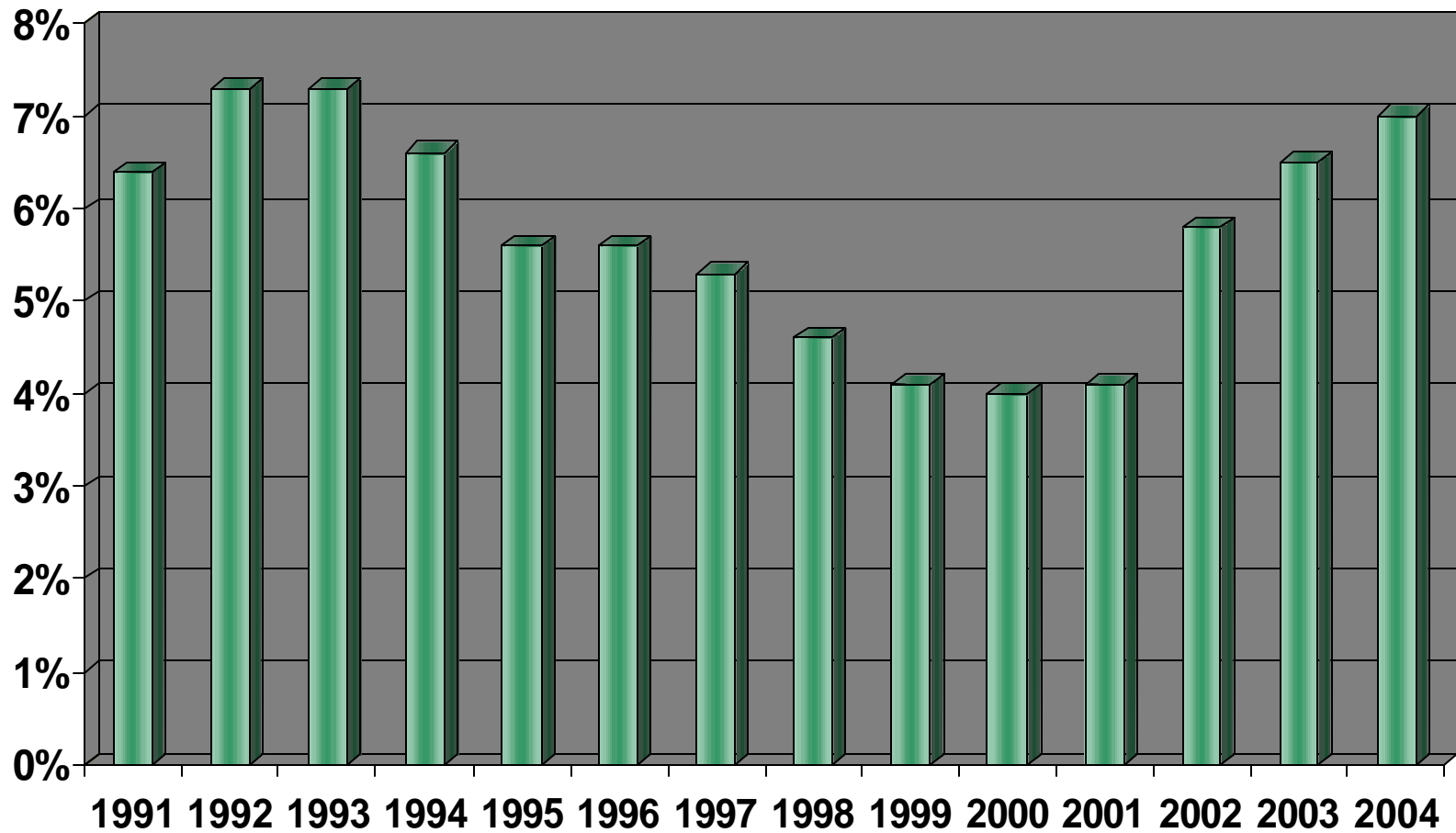
**“Corporations will raise downsizing to a fine art. Most company payrolls will consist of an insanely overpaid CEO, one psychotic managerial type who never eats, sleeps, or uses the restroom, and one underpaid ‘administrative assistant’ who mainlines anti-depressants.”**

# Economic Indicators

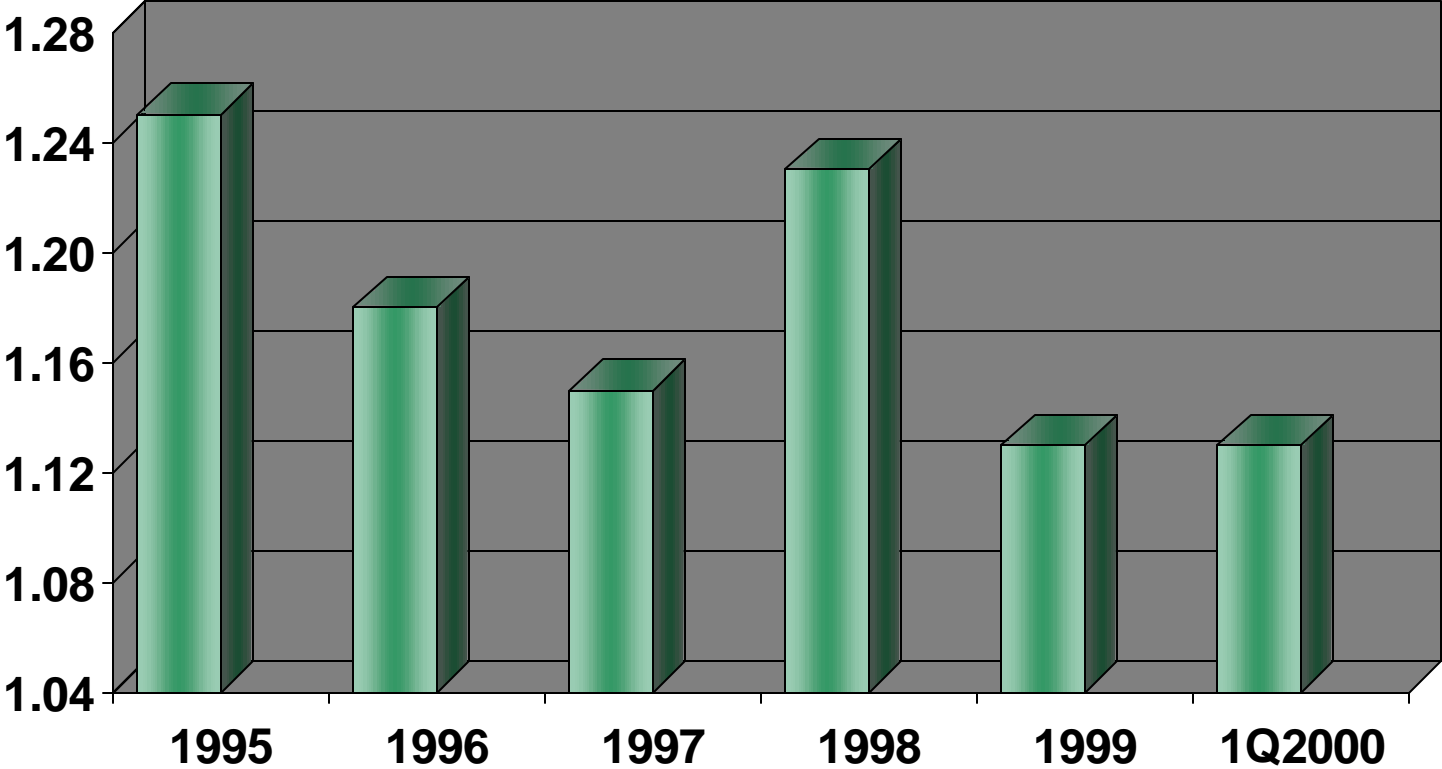
- **Gross Domestic Product: Measure of Economic Growth**
- **Consumer Confidence: Leading Indicator**
- **US Trade Deficit: Leading Indicator**
- **Inflation: Producer & Consumer Price Indices**
- **Employment Statistics**
  - Job Growth
  - Layoffs
  - Unemployment Rate
  - Wages
- **Interest Rates**
  - tool to manage economic growth



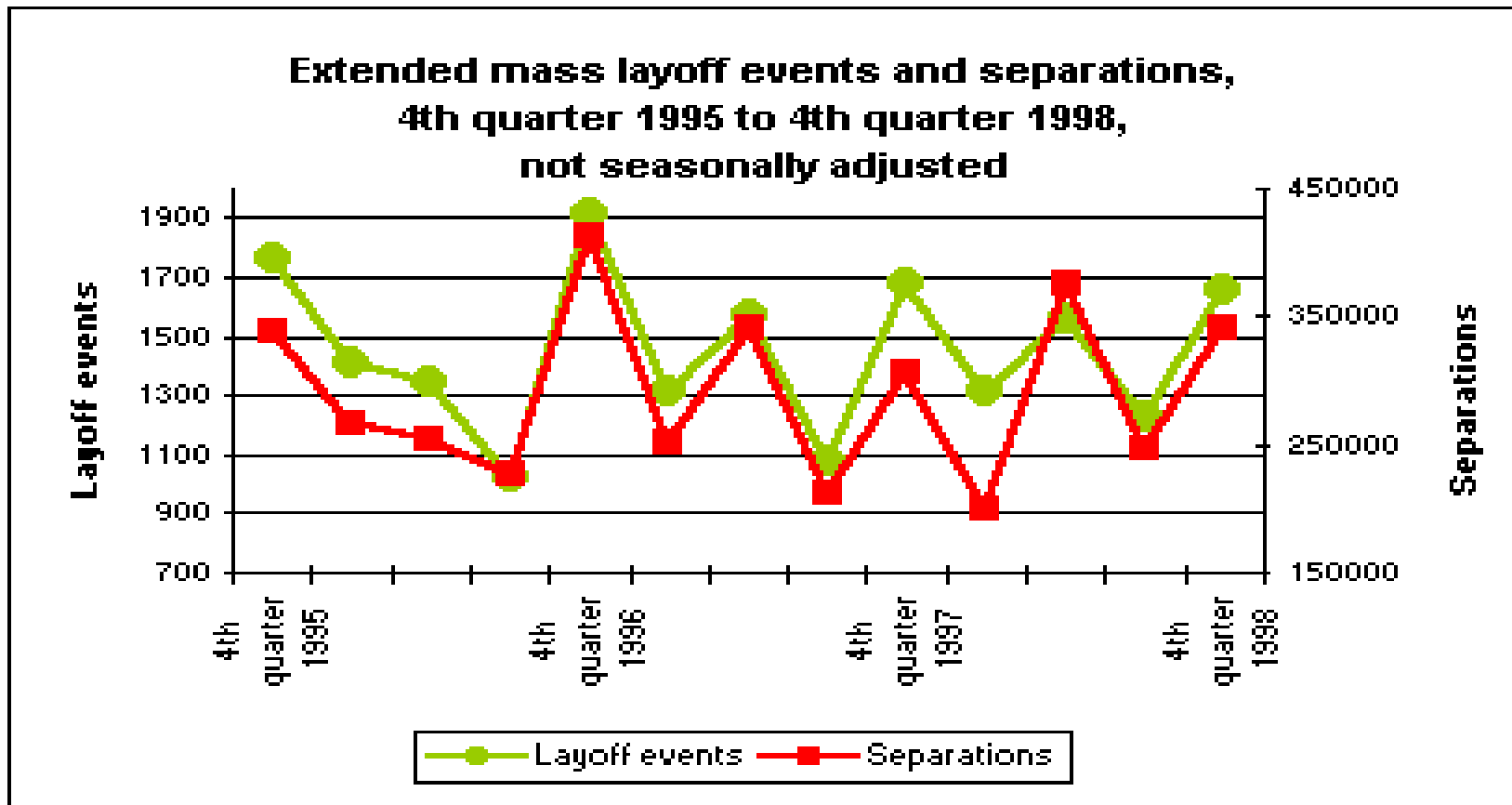
# Total U.S. Unemployment Rate 1991-Present



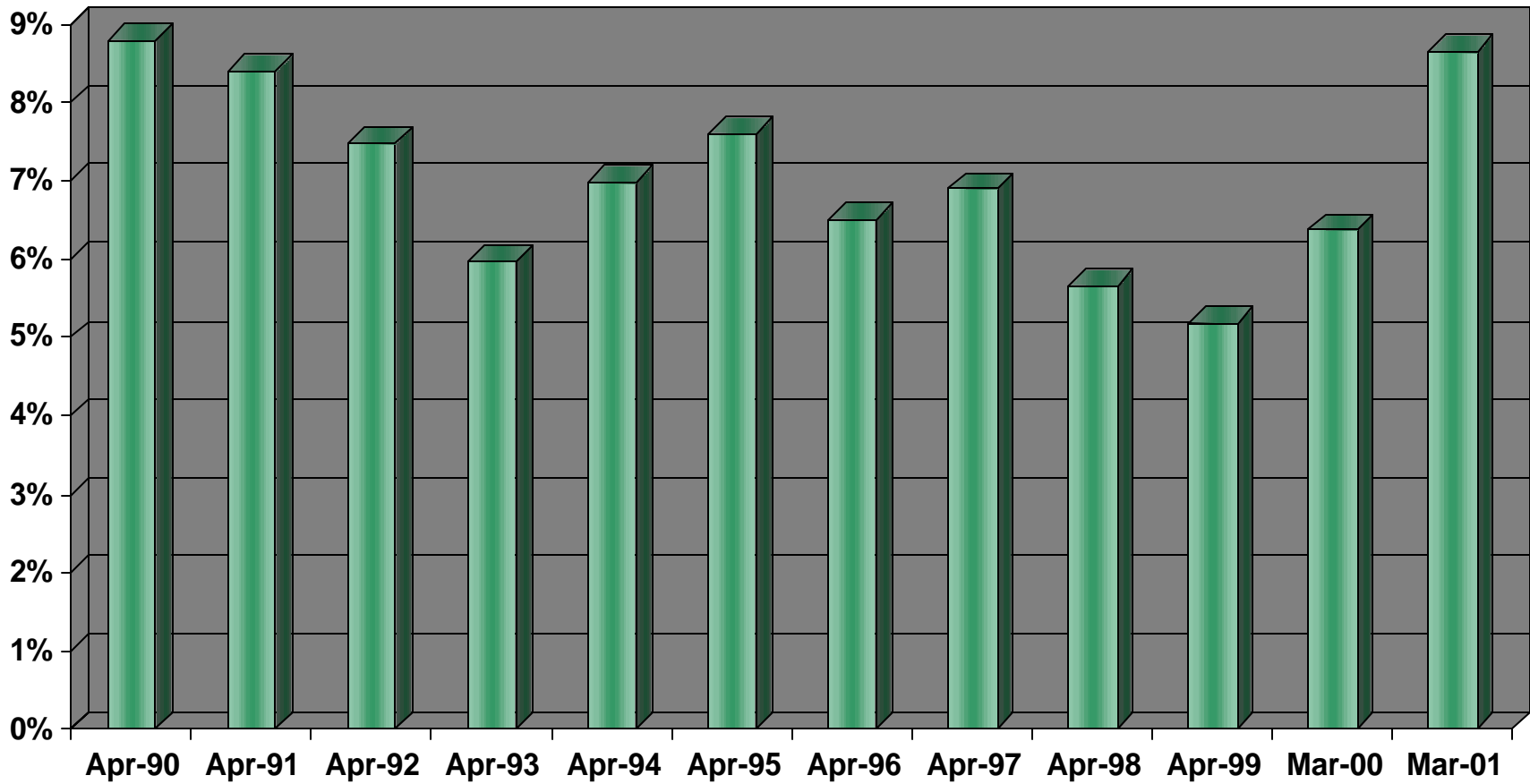
# U.S. Layoff Separations 1995-Present



# Mass Layoff Events & Separations 1995-1998

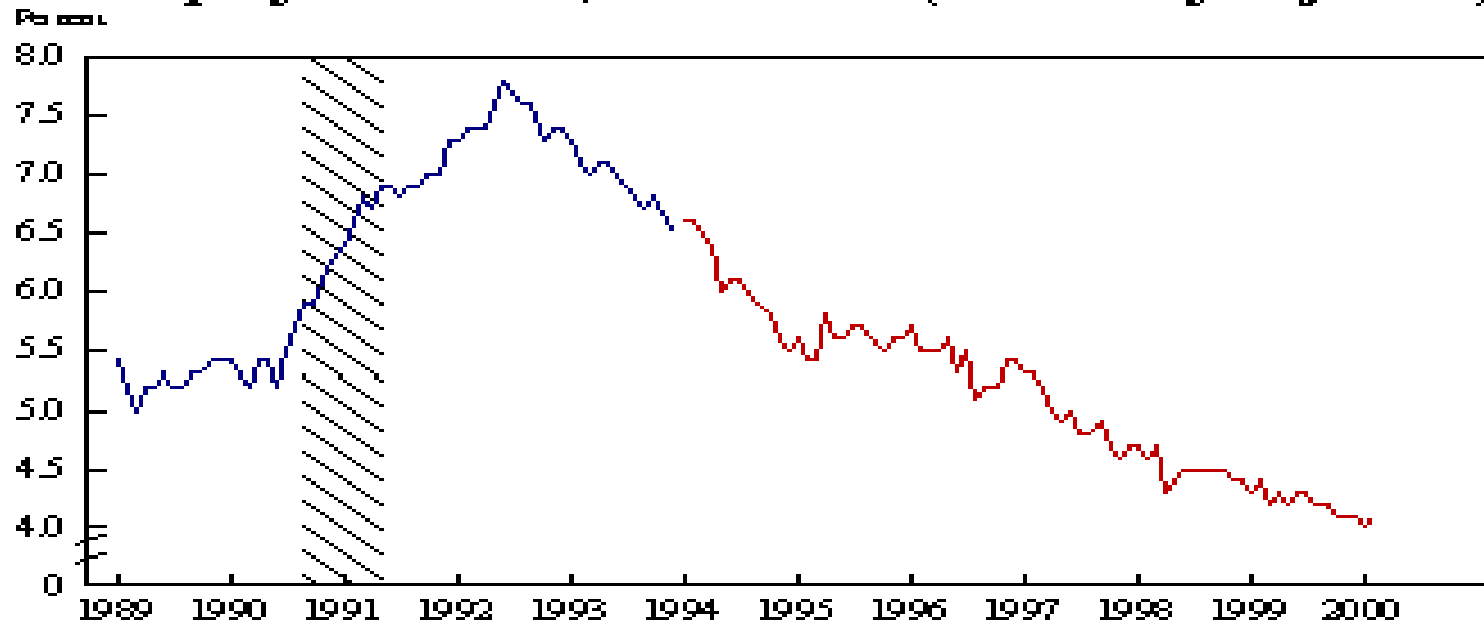


# Ten Year Treasury Rate



# Unemployment Rate 1989-2000

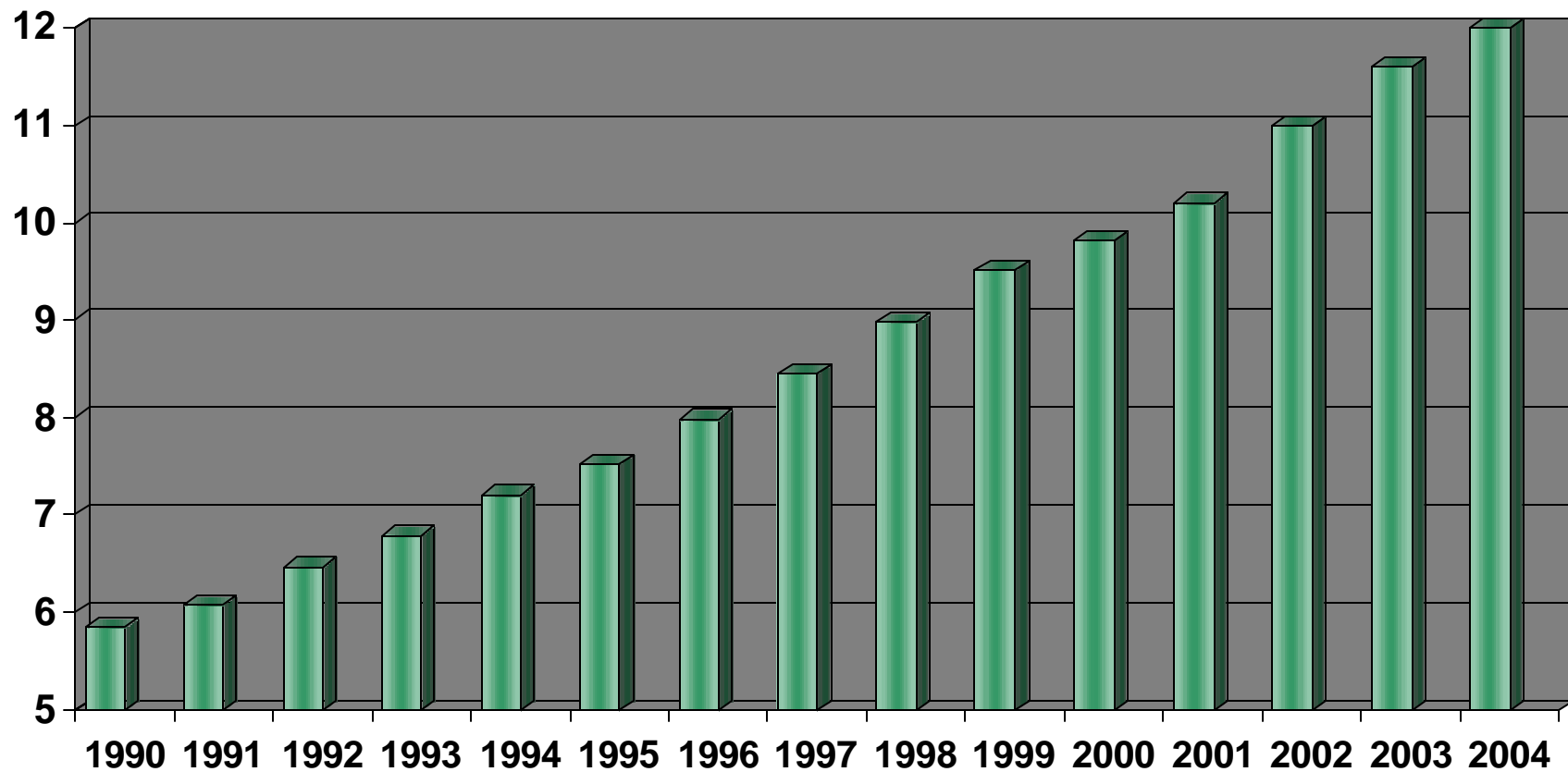
**Unemployment rate, 1989-2000 (seasonally adjusted)**



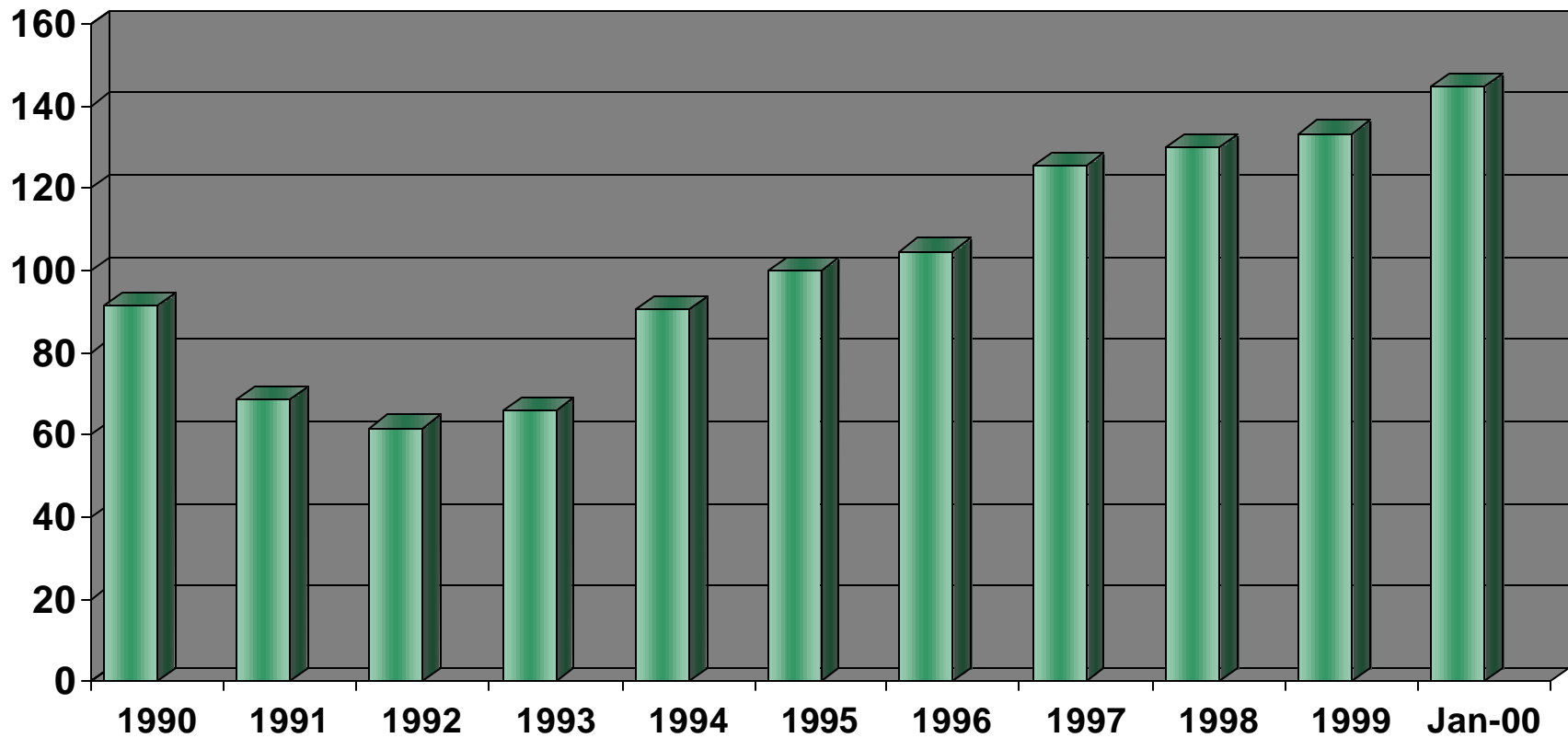
Source: Bureau of Labor Statistics  
Current Population Survey

Note: Shaded area represents recession. Break in series in January 1994 is due to the redesign of the survey.

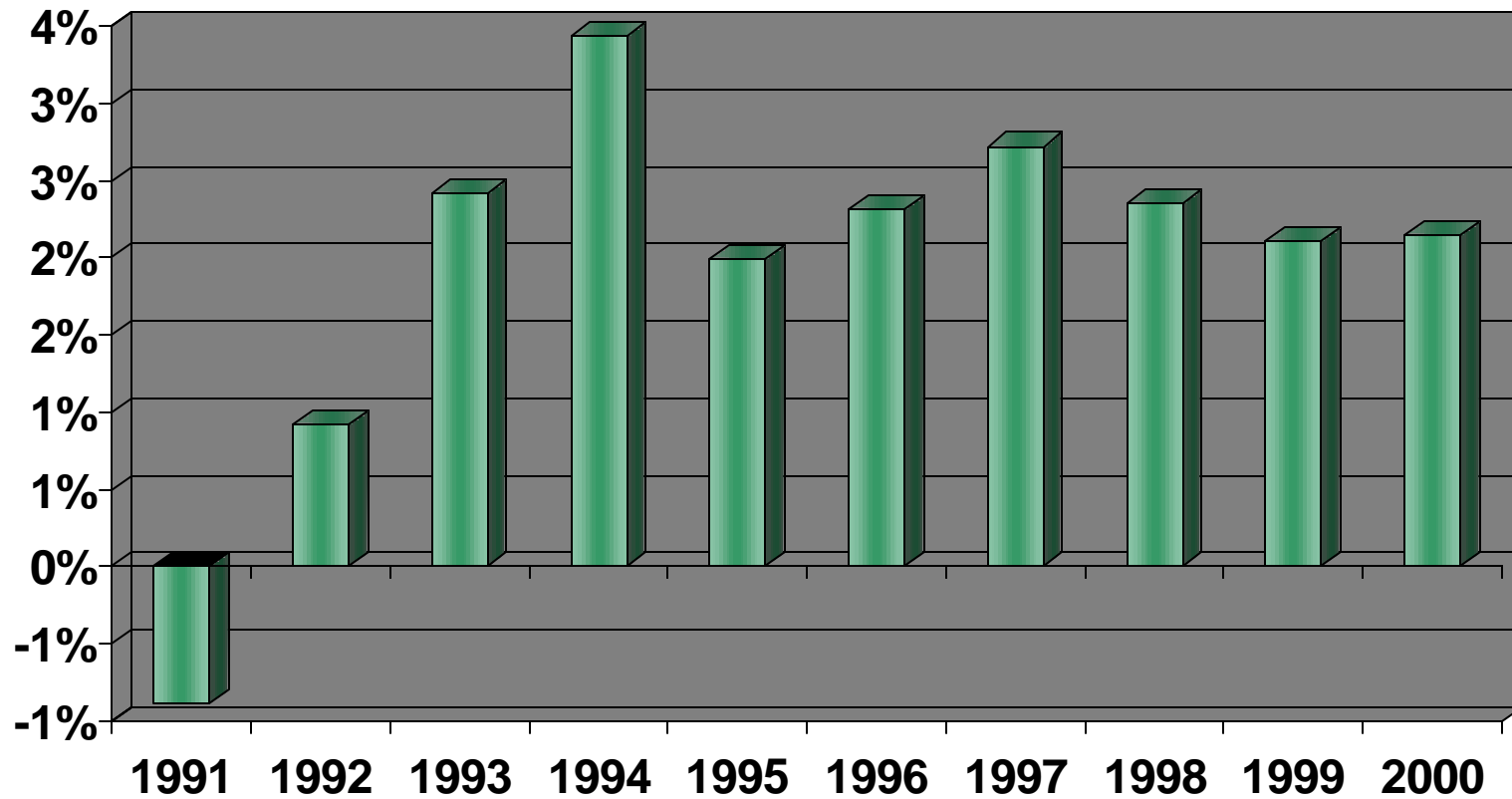
# Gross Domestic Product Billions of \$



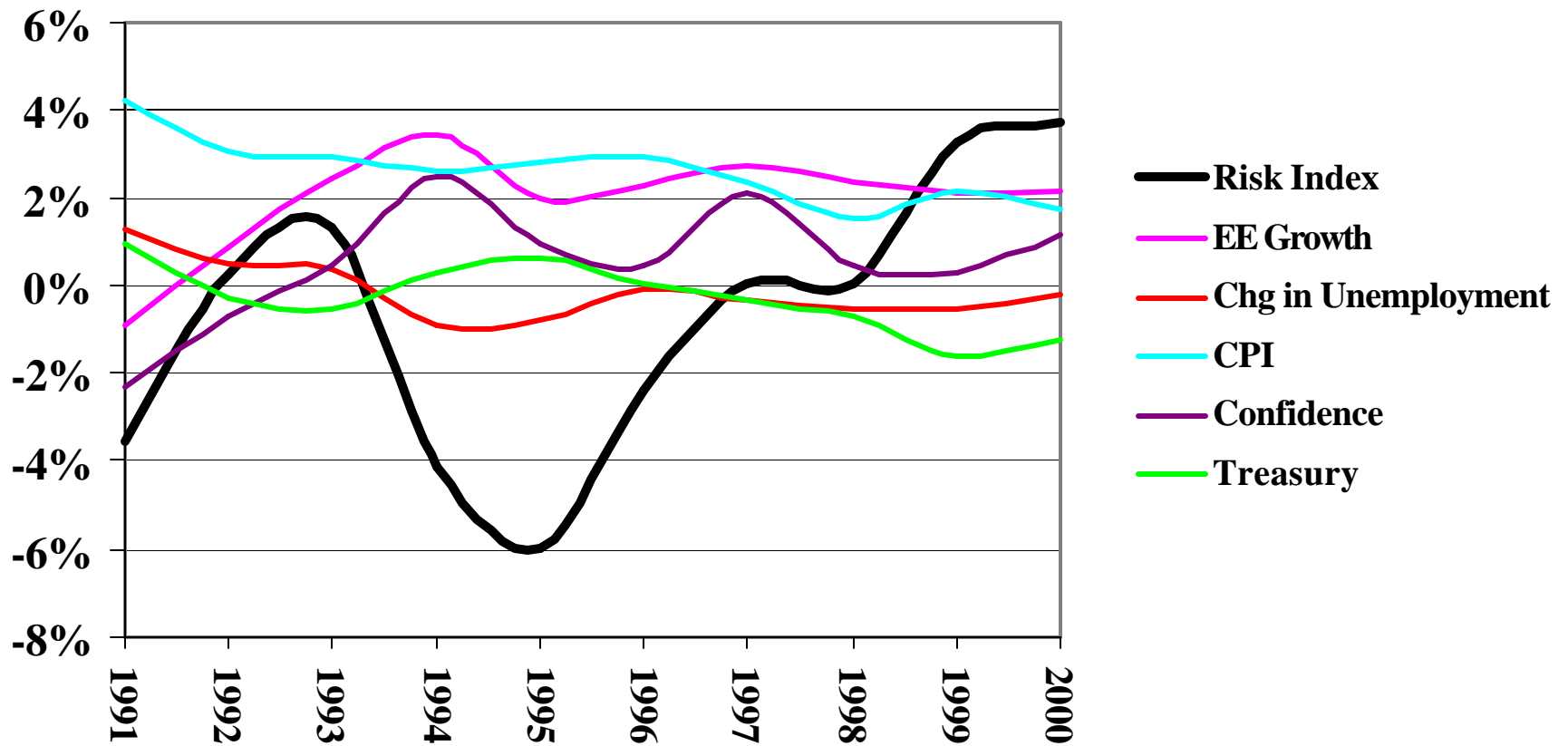
# Consumer Confidence Index Annual Average 1990-Present



# US Employee Growth

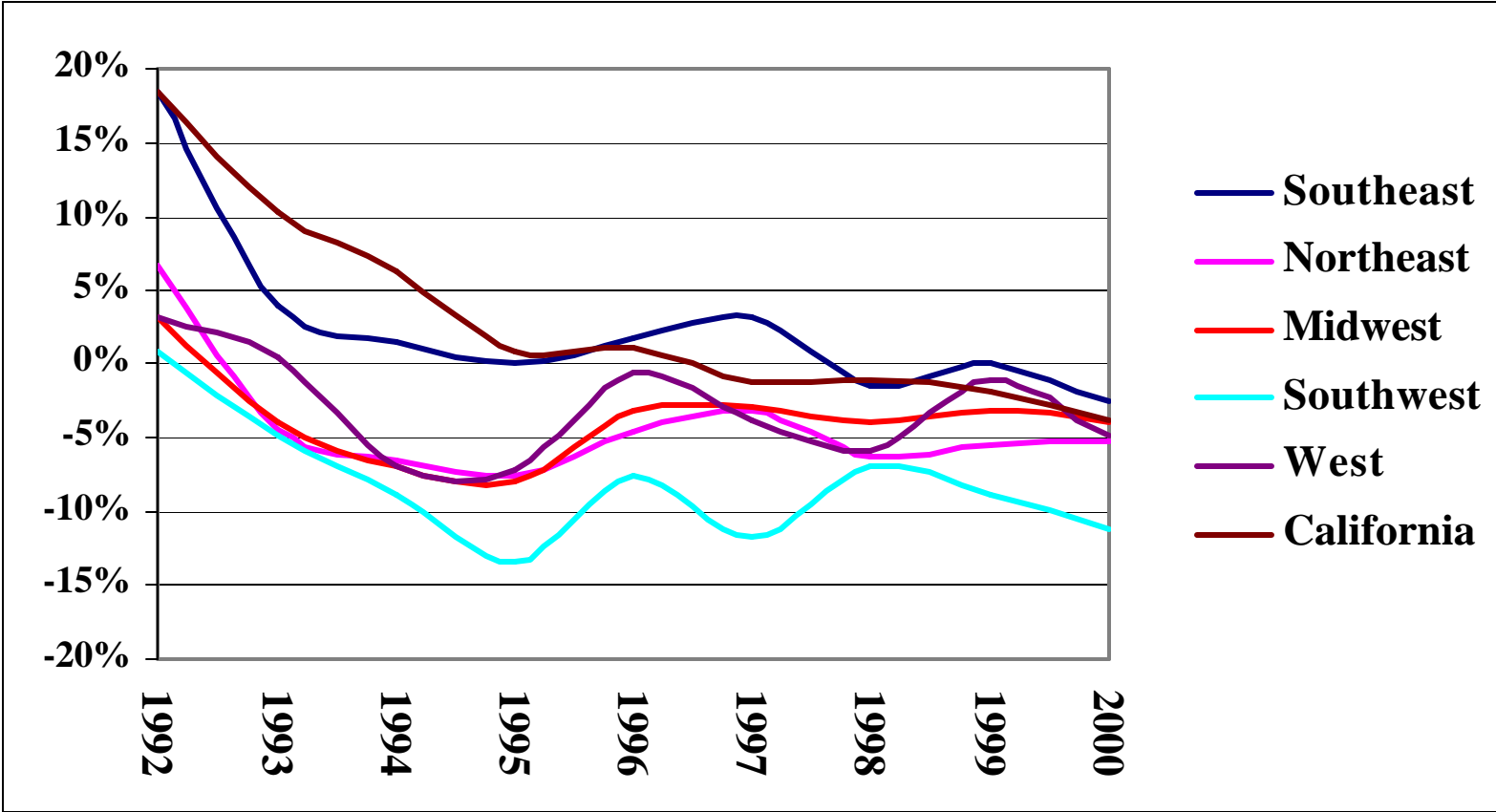


# Economic Risk Index



# Regional Risk Index

Based on 6 Month and 24 Month Employment Trends



# Disability Trends

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## Labor and Demographic Trends

- **Occupational Mix**
- **Compensation**
- **Tenure**
- **Workforce**
  - **Birthrates**
  - **Mortality**
- **Gender Composition**

# Changing Occupational Mix

## Projected Job Growth 1998 to 2008



Source: U.S. Department of Labor

## Increasing Use of Variable Compensation

### Percentage of Companies Offering Stock Option Programs

	<u>Percent</u>
Non-Exempt	24%
Exempt	66%
Officers/Executives	94%

- 63% of companies offer some form of variable pay.
- Exempt salaried employees averaged 8.4% variable pay in 1999.

Source: American Compensation Association Total Salary Survey

## Declining Tenure

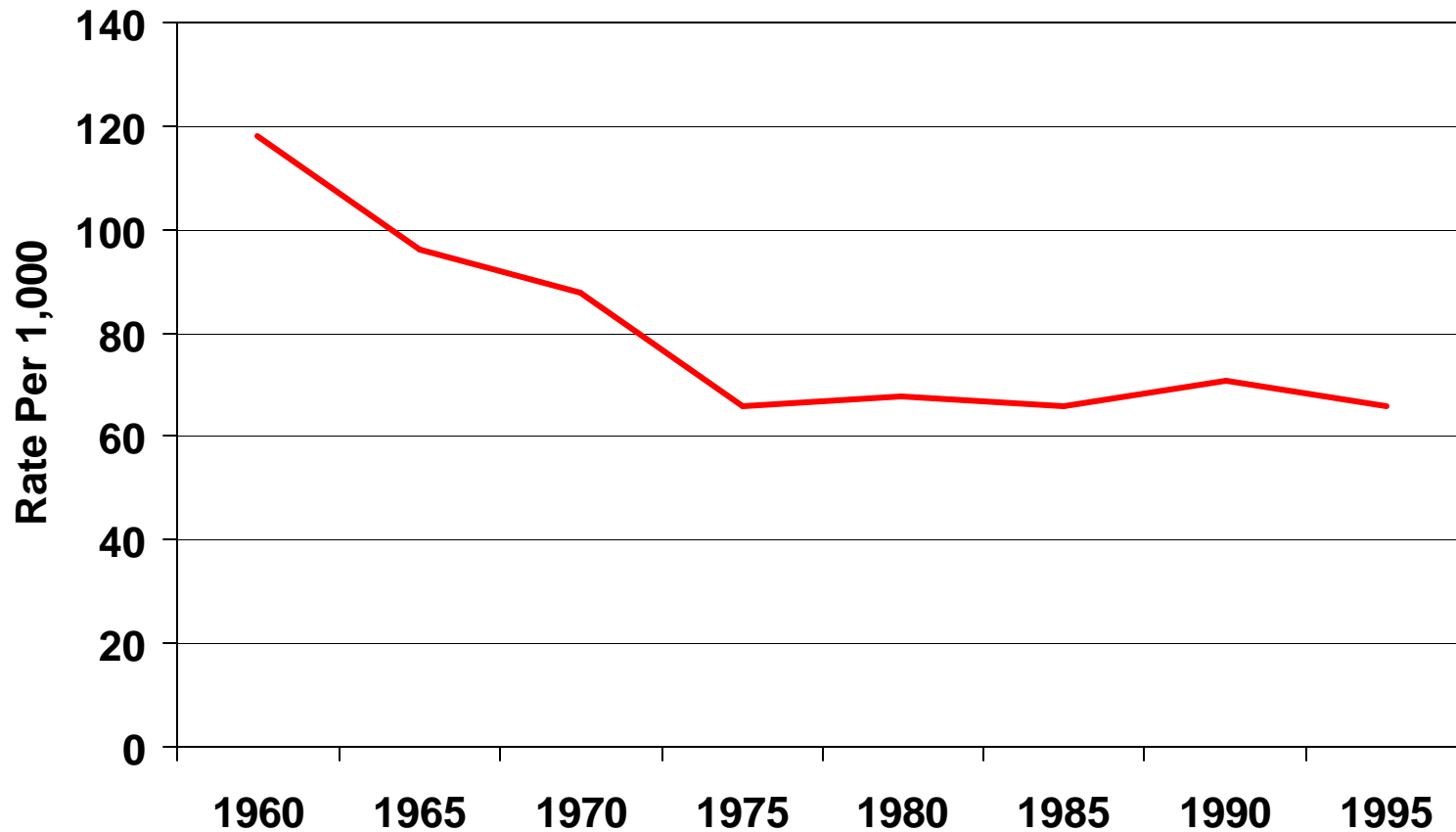
### Median Years of Tenure With Current Employer

<u>Industry</u>	<u>1996</u>	<u>1998</u>
Agriculture	3.4	2.9
Mining	6.1	5.6
Construction	2.9	2.7
Manufacturing	5.4	4.9
Transportation	5.2	4.8
Wholesale Trade	3.9	4.1
Retail Trade	1.9	1.8
Finance	4.1	3.5
Services	3.0	2.9
<u>Government</u>	<u>6.9</u>	<u>7.3</u>
<b>Total</b>	<b>3.8</b>	<b>3.6</b>

Source: U.S. Bureau of Labor Statistics

# Aging Workforce – Low Birthrates

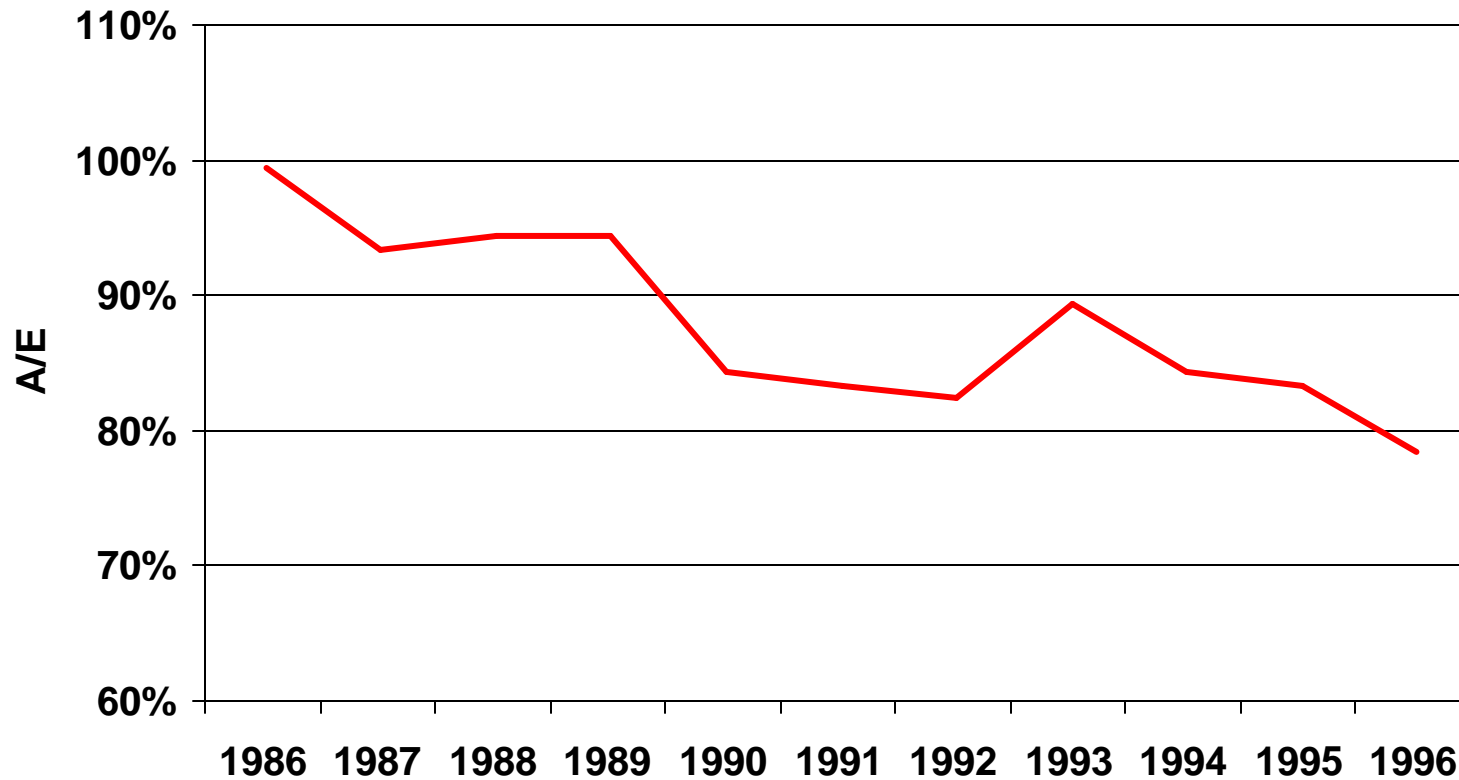
## U.S. Fertility Rates



Source: Center of Disease Control

# Aging Workforce – Improving Mortality

## Disabled Life Mortality

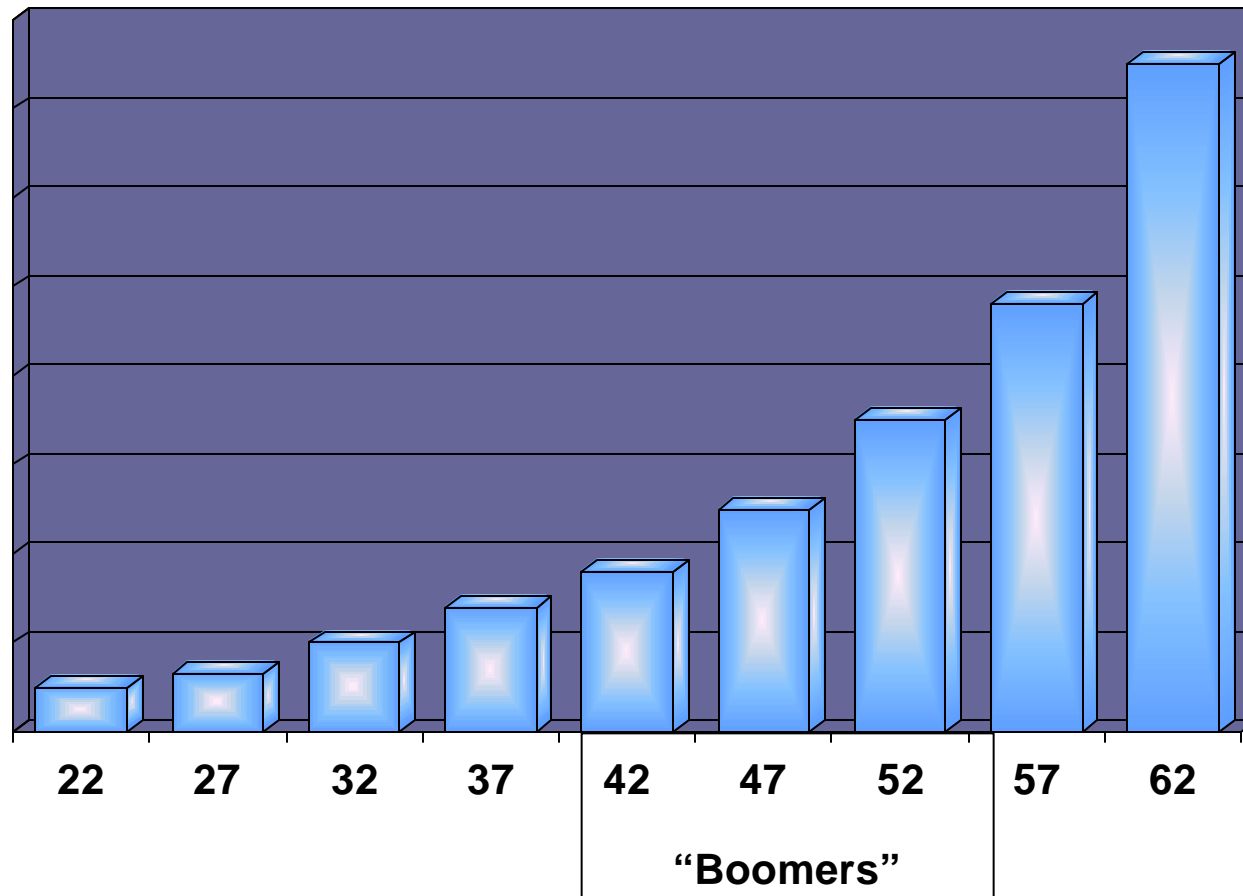


Source: Table 95A

# Aging Workforce

## LTD Incidence

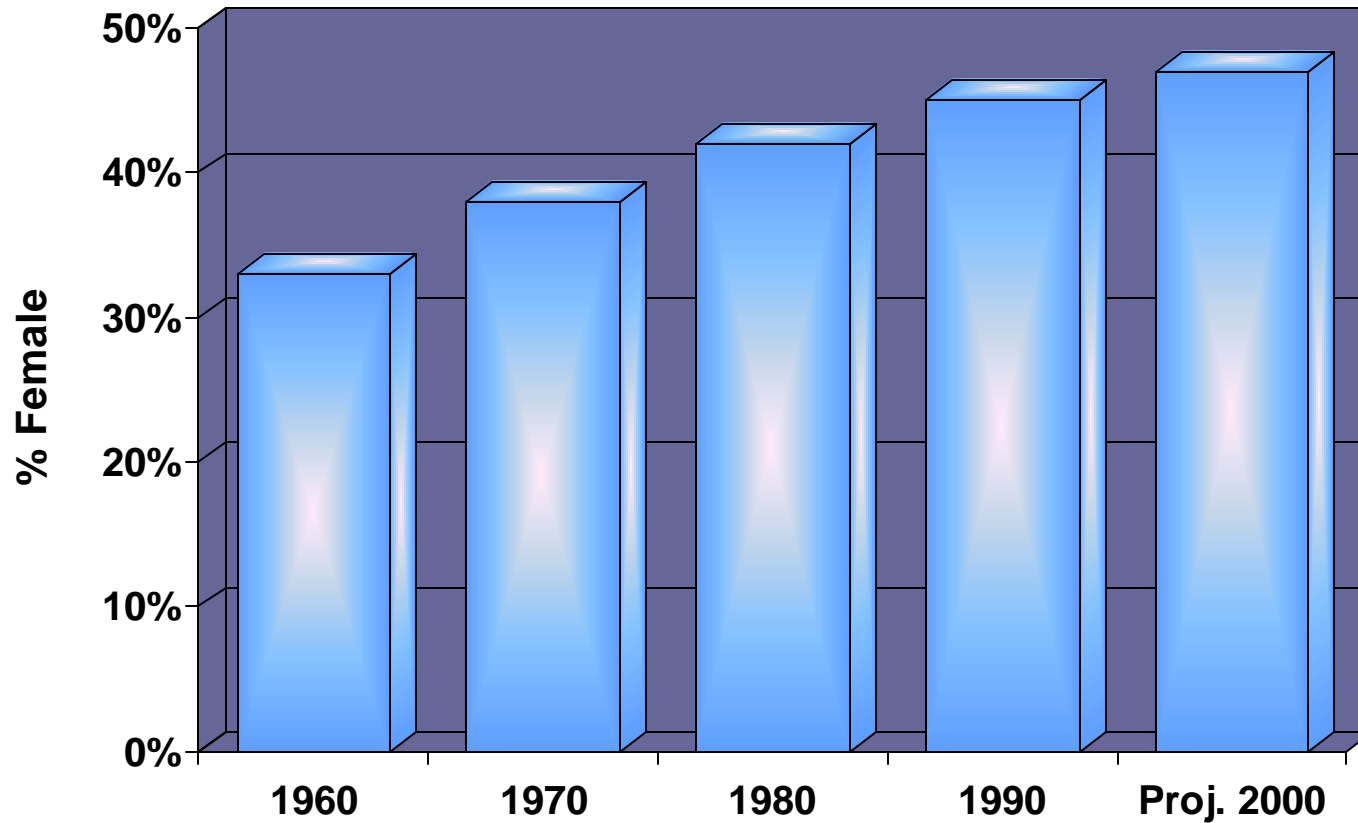
50/50 Male/Female



Source: Unum Database

# Changing Gender Composition

## Labor Force Participation of Women



Source: U.S. Bureau of Labor Statistics

**UNUMPROVIDENT**  
CORPORATION

## Varying Female Participation

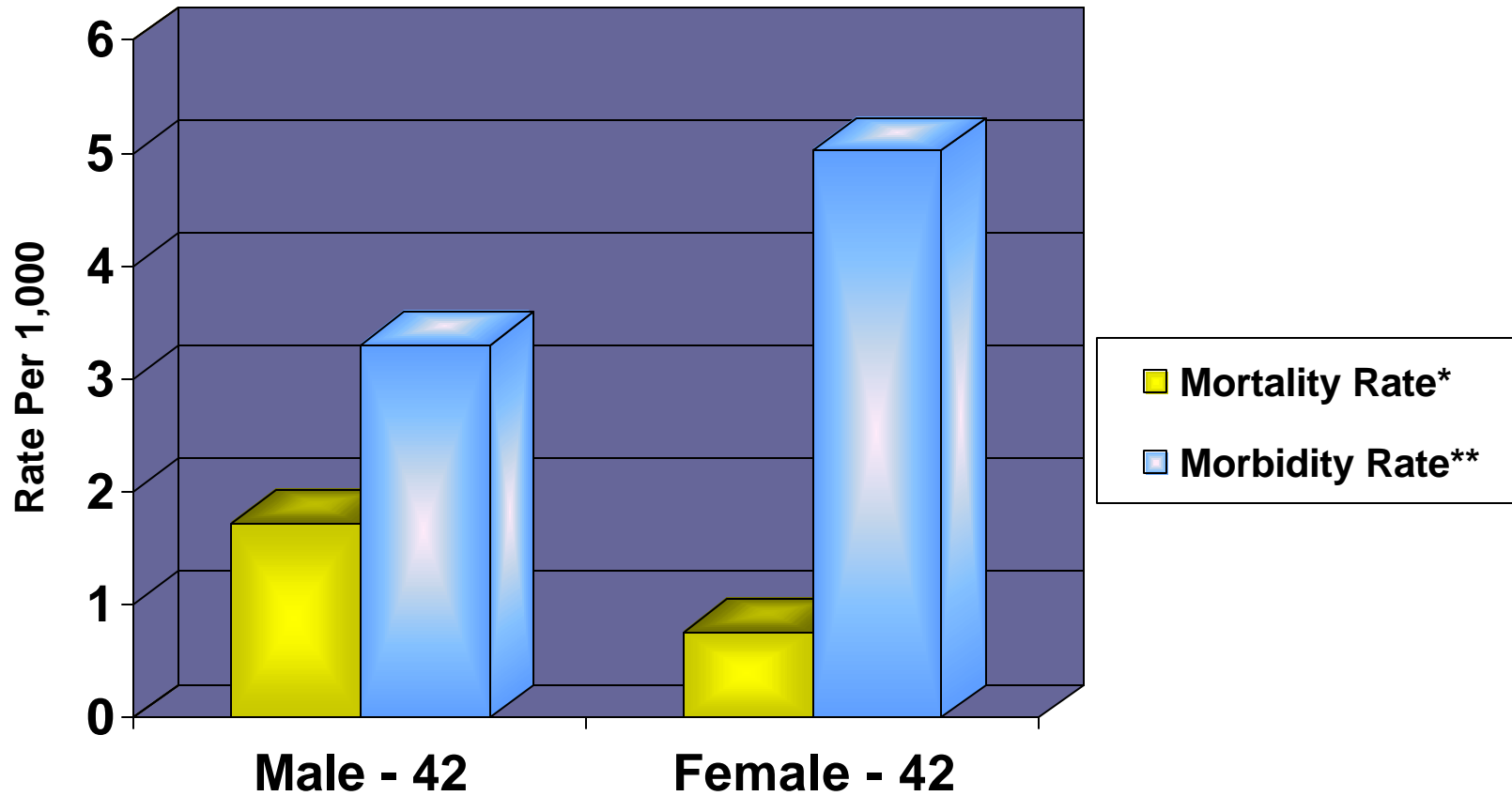
### Female Employment by Industry

<u>Industry</u>	<u>Percent Female</u>
Agriculture	25
Mining	14
Construction	9
Manufacturing	32
Transportation	29
Wholesale Trade	30
Retail Trade	51
Finance	58
Services	62
<u>Government</u>	<u>44</u>
Total	46%

Source: U.S. Bureau of Labor Statistics

# Changing Gender Composition

## Mortality vs. Morbidity



\*1985-89 SOA Study Trended to 1998

\*\*1987 GLTD Study - 90 Day EP

## Summary

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### Case Study – Sample Employer

<u>Trend</u>	<u>Impact</u>
Low Inflation	Limits potential price increases; employer focus on expense management and variable cost structures
Declining Tenure	Portability more attractive option
Aging Workforce	Shrinking labor pool Health care and disability cost pressures