



# **Economic Insights:** Conversations with the Dallas Fed Webcast Series

“Labor Market Polarization and the  
Importance of Education and  
College Preparedness”

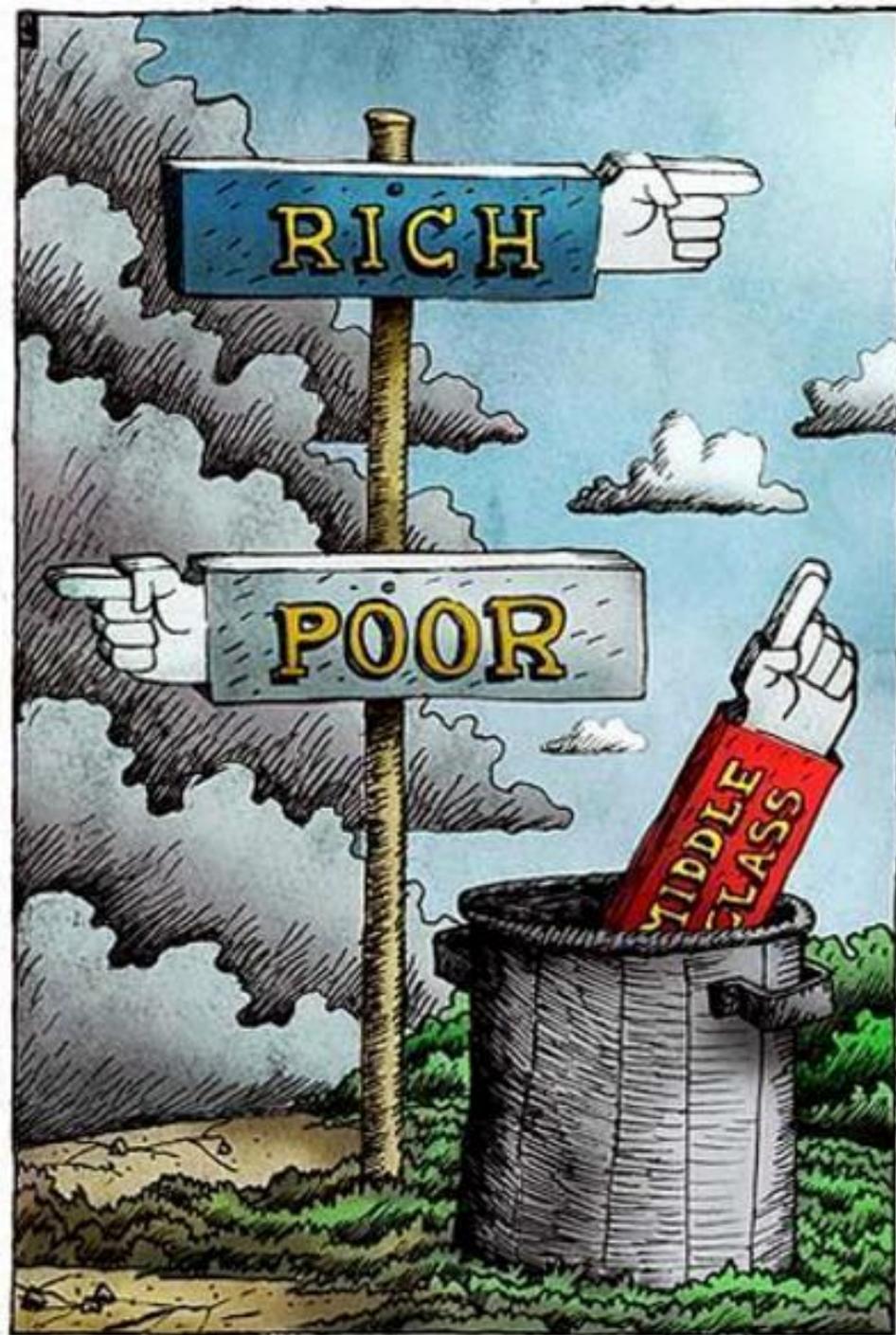
May 14, 2014



# U.S. Labor Market Polarization

Anton Cheremukhin  
Senior Research Economist  
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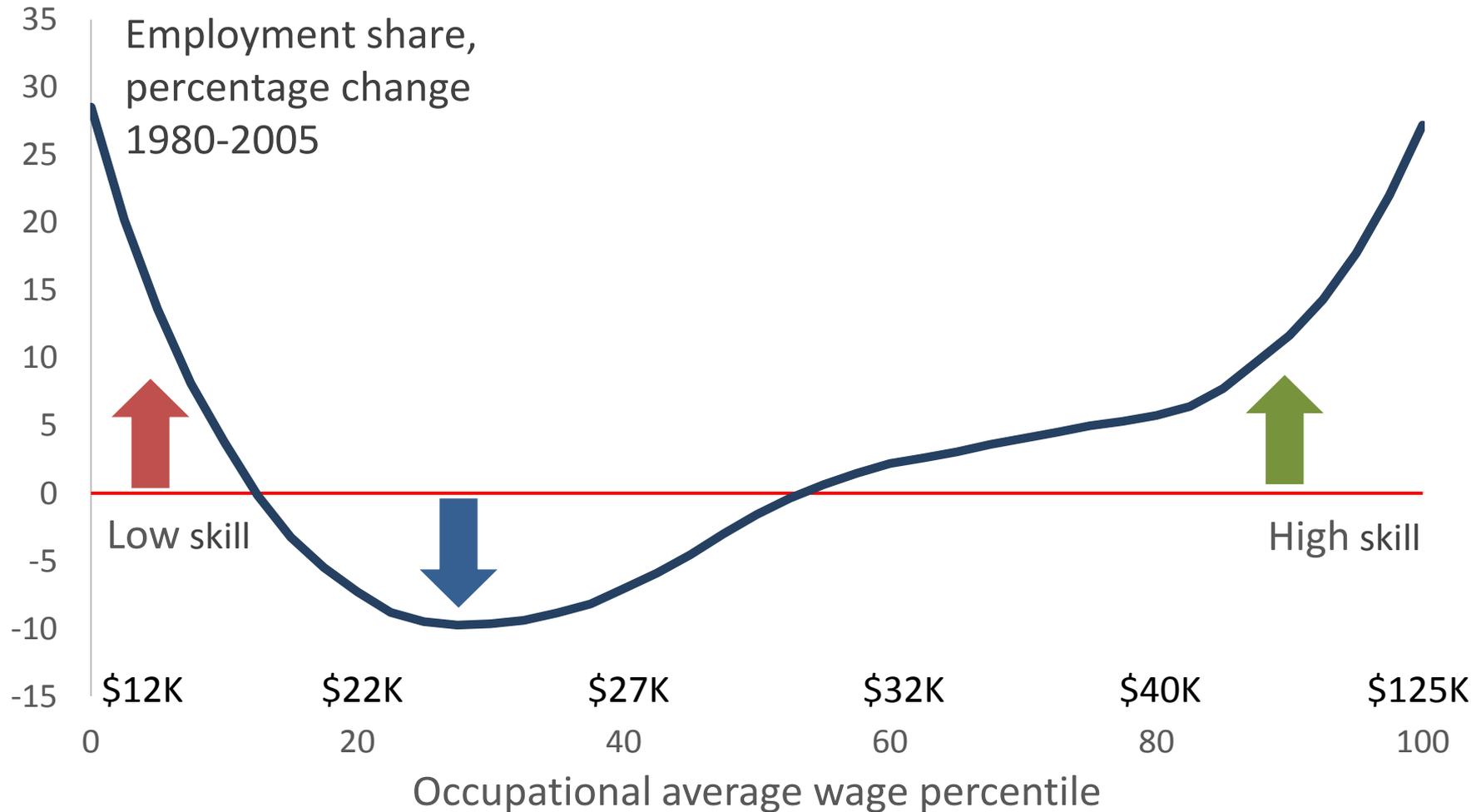
# U.S. Labor Market Polarization

Anton Cheremukhin

Presentation at the  
Federal Reserve Bank of Dallas

May 14, 2014

# Labor Market Polarization: The disappearance of middle-class jobs



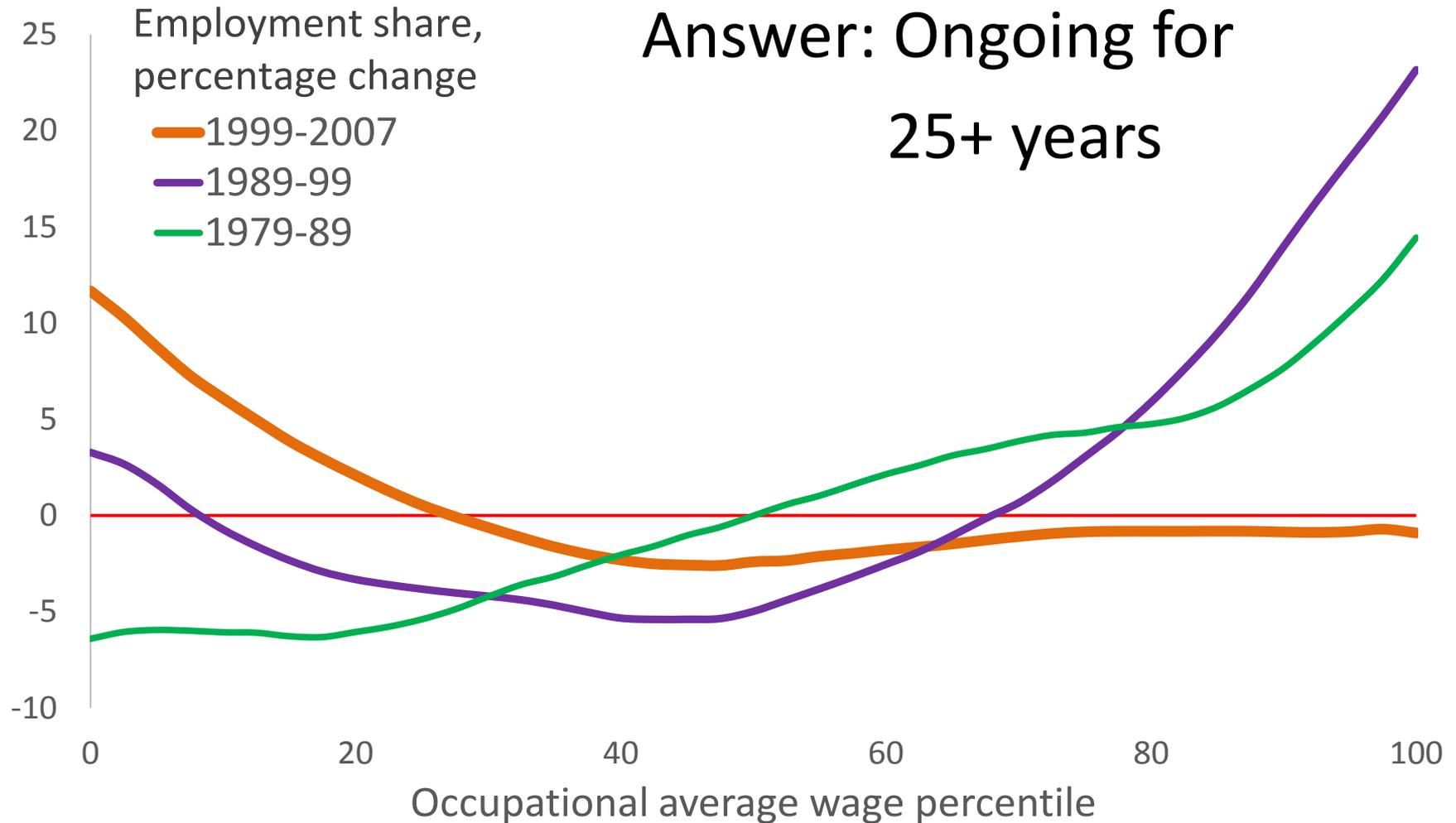
Source: Autor and Dorn (2013)

# Outline

Middle-class jobs are disappearing

- When did this start?
- Which jobs are disappearing?
- What are the causes?
- Is there a connection to the business cycle?

# Labor Market Polarization: Old news or new phenomenon?



# Job Classification

Routine

Non-routine

Blue collar  
(manual)

Production  
Crafts  
Operative  
Repair

Food service  
Personal care  
Protective service

White collar  
(cognitive)

Clerical  
Administrative  
Sales

Professional  
Technical  
Managerial

**low-skill**

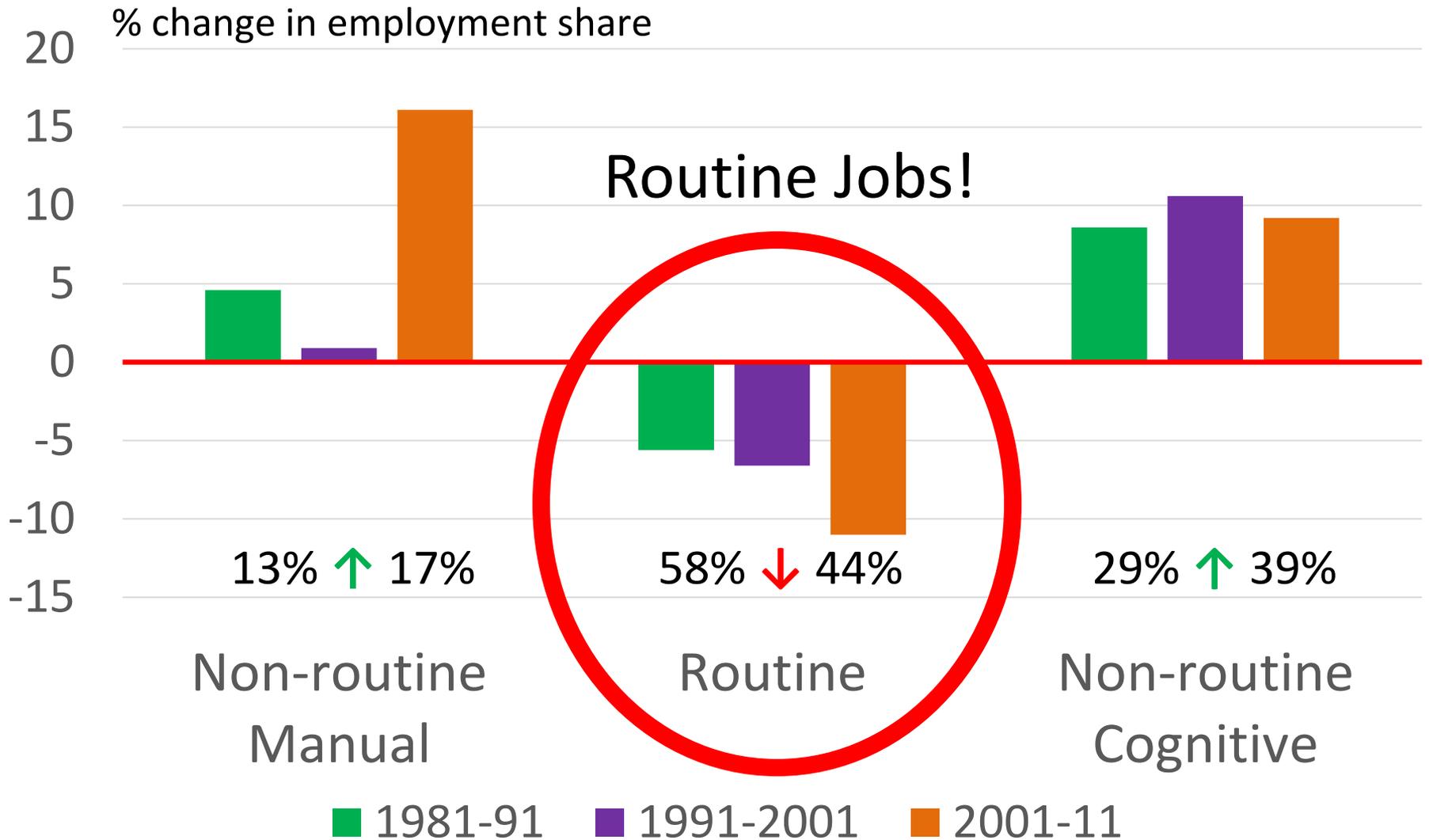
**middle-skill**

**high-skill**

# Job Classification

- High-skill jobs: white-collar non-routine
  - Abstract tasks: problem solving, intuition, persuasion
  - College education
- Middle-skill jobs: routine
  - Routine tasks: follow precise, well-understood procedures, can be carried out by computer
  - High-school +
- Low-skill jobs: blue-collar non-routine
  - Manual tasks: situational adaptability, visual/language recognition, in-person interaction
  - High school or less

# Which jobs are disappearing?



# Why are middle-skill jobs disappearing?

- Changes in labor-market institutions?
  - Declining labor-union penetration
  - Falling real minimum-wage

Above are minor factors:

- Economy-wide polarization, unions confined to manufacturing and public sector
- Minimum wage declined sharply in 1980s, stabilized and even increased later on
- Polarization pronounced in most European countries

# Why are middle-skill jobs disappearing?

- Changes in labor-market institutions
- Shifts in labor supply?
  - Changing labor force composition
  - Slowing growth rate of college education

Notable factor because:

- Changes uneven by gender

# Job Polarization by Gender



# Why are middle-skill jobs disappearing?

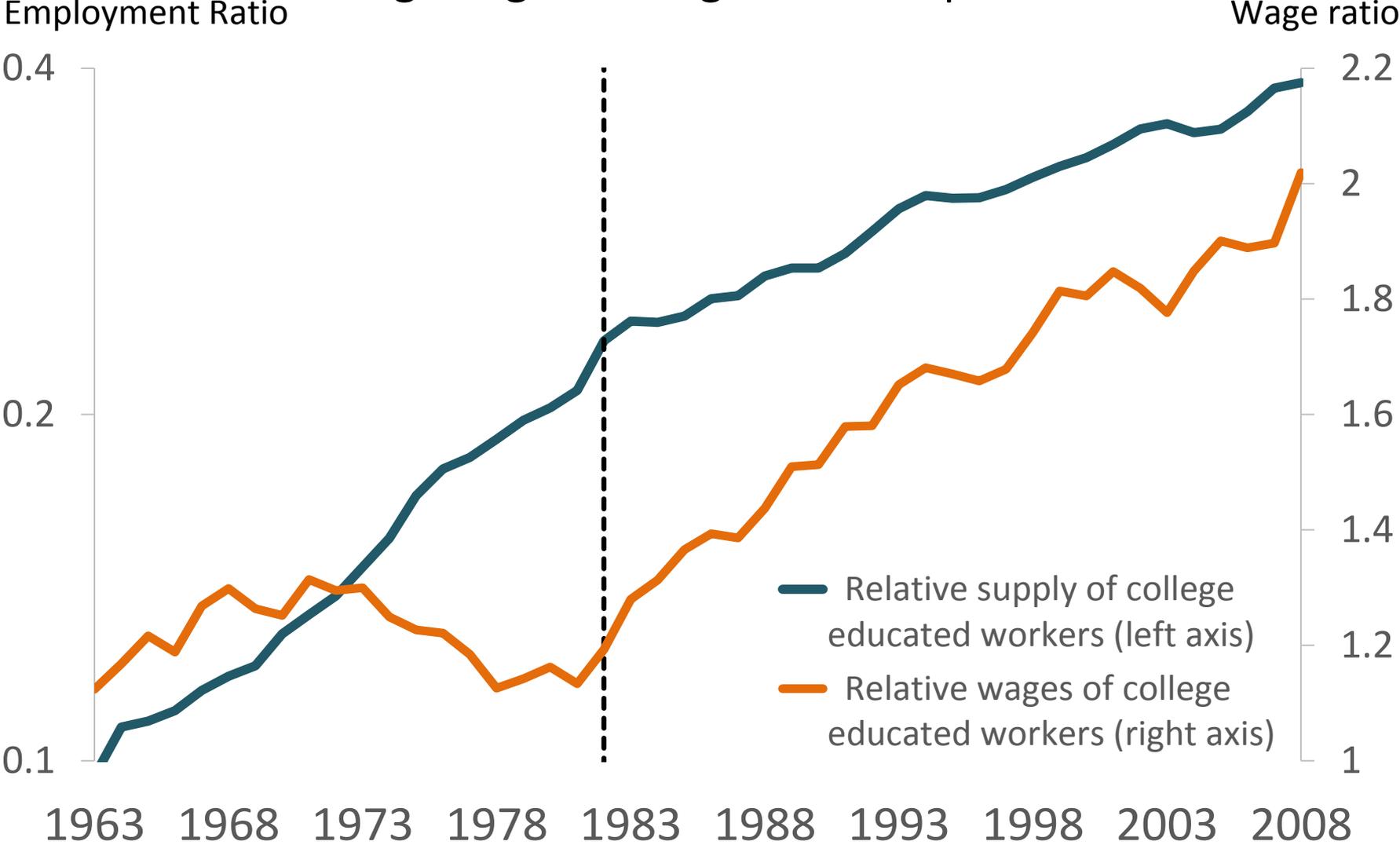
- Changes in labor-market institutions
- Shifts in labor supply?
  - Changing labor force composition
  - Slowing growth rate of college education

## Notable factor because:

- Changes uneven by gender and by education
- Wage gap between high-school and college graduates sky-rocketed after 1980

# Skill premium and Educational Attainment

College degree vs high school diploma



Source: Autor (2010)

# Why are middle-skill jobs disappearing?

- Changes in labor-market institutions
- Shifts in labor supply
- Shifts in labor demand
  - Globalization/offshoring
  - Changes in technology

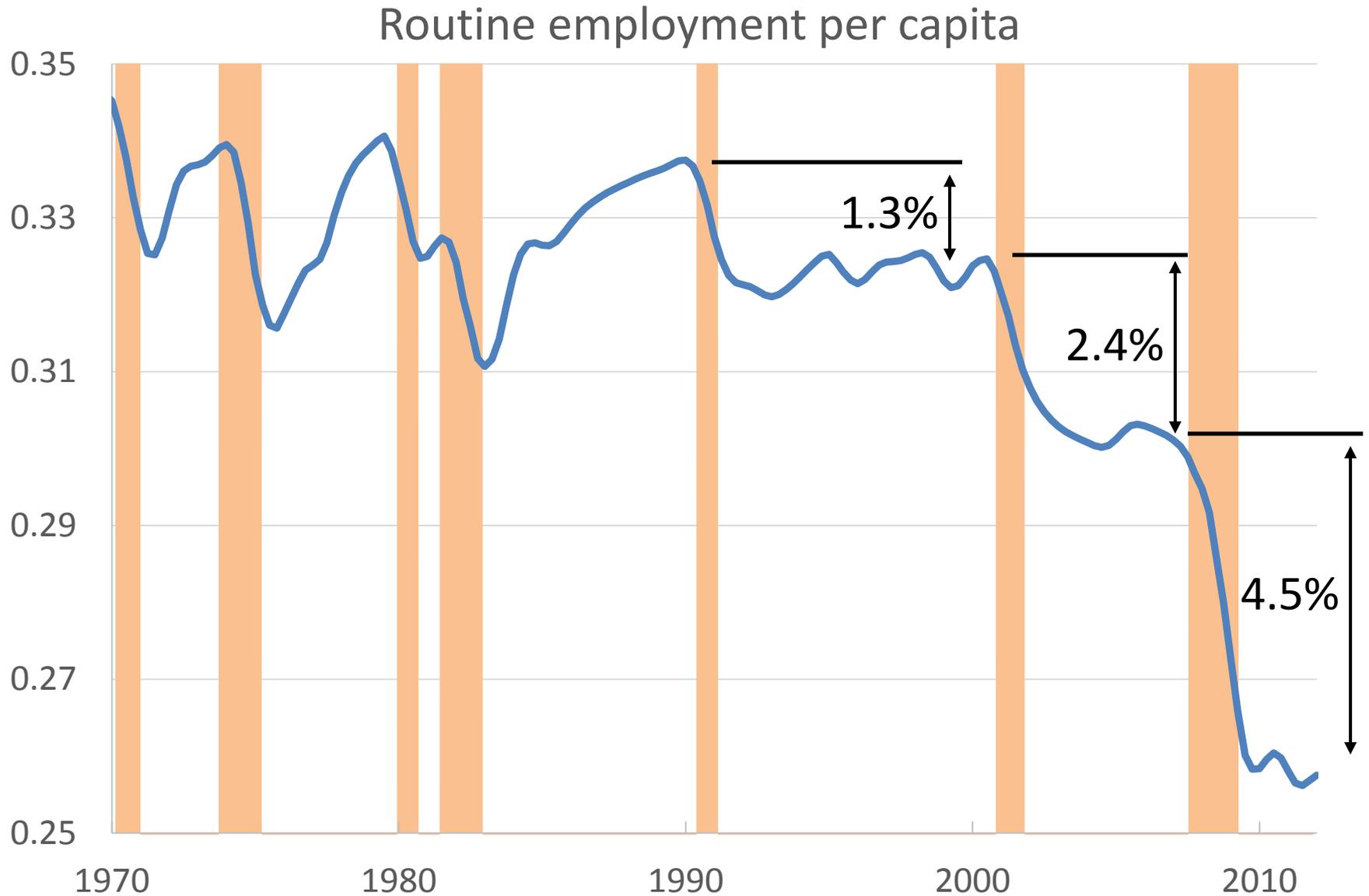
Predominant factor

**Technology replacing routine tasks:  
Automation and computerization**

# Related to Business Cycles?

- Loss of routine jobs concentrated in recessions
  - Not recovered in post-1990 expansions

# Most Routine Jobs Lost in Recessions



Source: Jaimovich and Siu (2012)

# Related to Business Cycles?

- Loss of routine jobs concentrated in recessions
  - Not recovered in post-1990 expansions
  - Accounts for most of middle-class job losses
  - Largely explains jobless recoveries

# Road Ahead

- Automation likely to continue
  - A large number of routine jobs vulnerable to further replacement by machines
  - Many currently non-routine jobs can become routine (driverless cars; drones; online education; robot surgery)
- Offshoring has a large potential for expansion
- Skill premium likely to improve demand for education and replenish supply of talent

**JOB AND WAGE POLARIZATION  
LIKELY TO CONTINUE**



# The Importance of Education and College Preparedness

William McKenzie  
Editorial Director  
George W. Bush Institute

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# The Economic Impact of Education & College Preparedness

# Areas of Engagement

- Education Reform
- Economic Growth
- Human Freedom
- Global Health
- Military Service Initiative
- Women's Initiative



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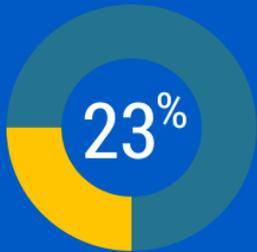


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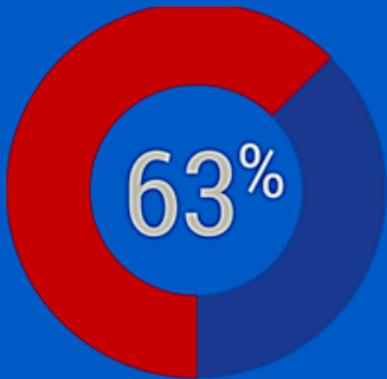
# Accountability - Good for Business



U.S. would generate \$8 billion annually if 5% of dropouts stayed in school and attended college



Dropouts cost U.S. \$198 billion each year



U.S. annual GDP could increase by as much as \$525 billion if we closed the achievement gap

## \$831 billion

Cost of the  
The Recovery Act

McKinsey Study the Economic Impact of Closing the Achievement Gap in America's Schools, 2009

Amos, 2008



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# The U.S. Job Market Ahead

## 4 out of 5

jobs lost over the last few years affected workers with a high school diploma or less



66%

of jobs will require some form of postsecondary education in the next five years



National Center for Education Statistics, U.S. Department of Education, 2014

The Organisation for Economic Co-operation and Development (OECD), PISA, 2012

Center on Education and the Workforce



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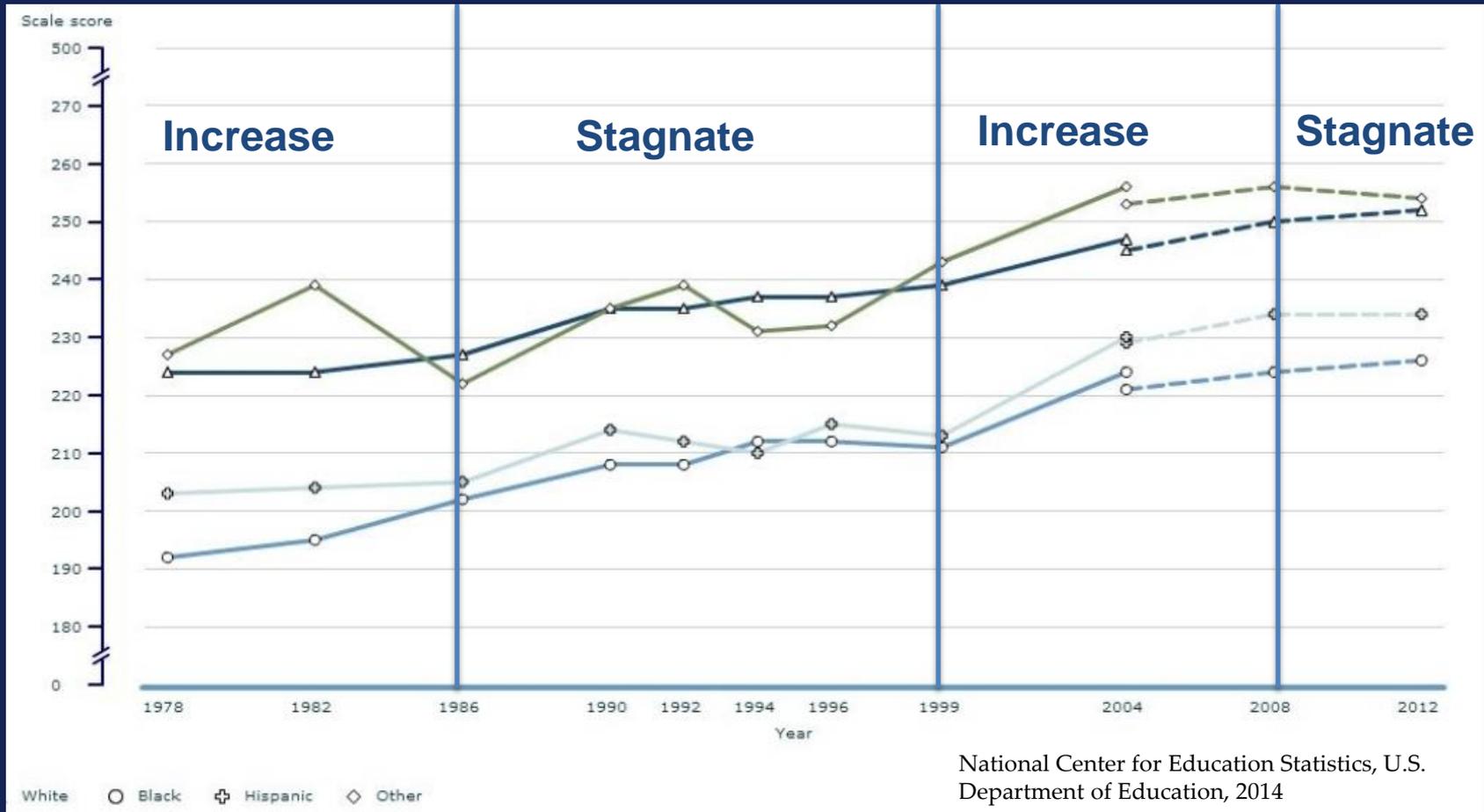


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# NAEP LTT, Math, 9 Year Olds



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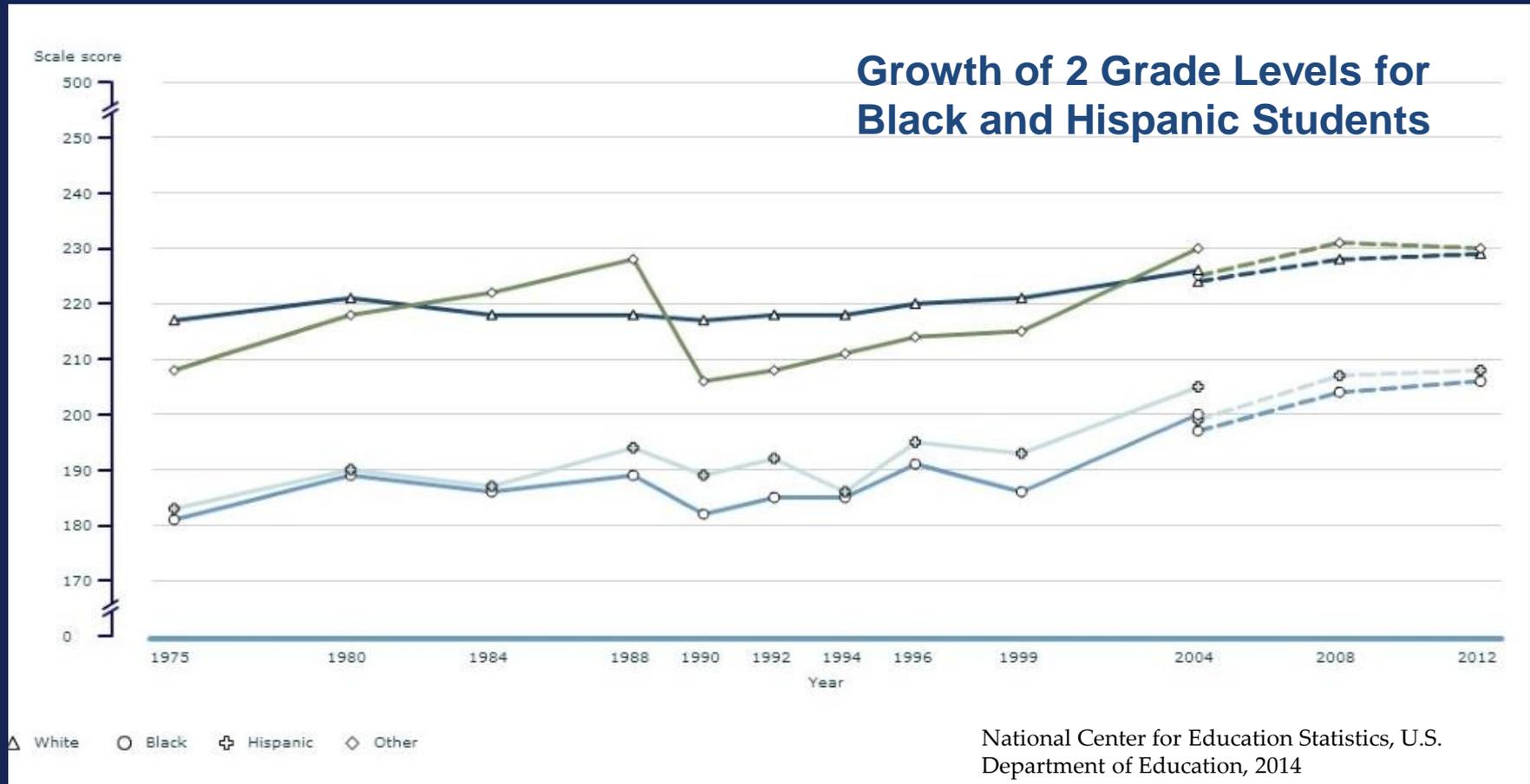


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# NAEP LTT, Reading, 9 Year Olds



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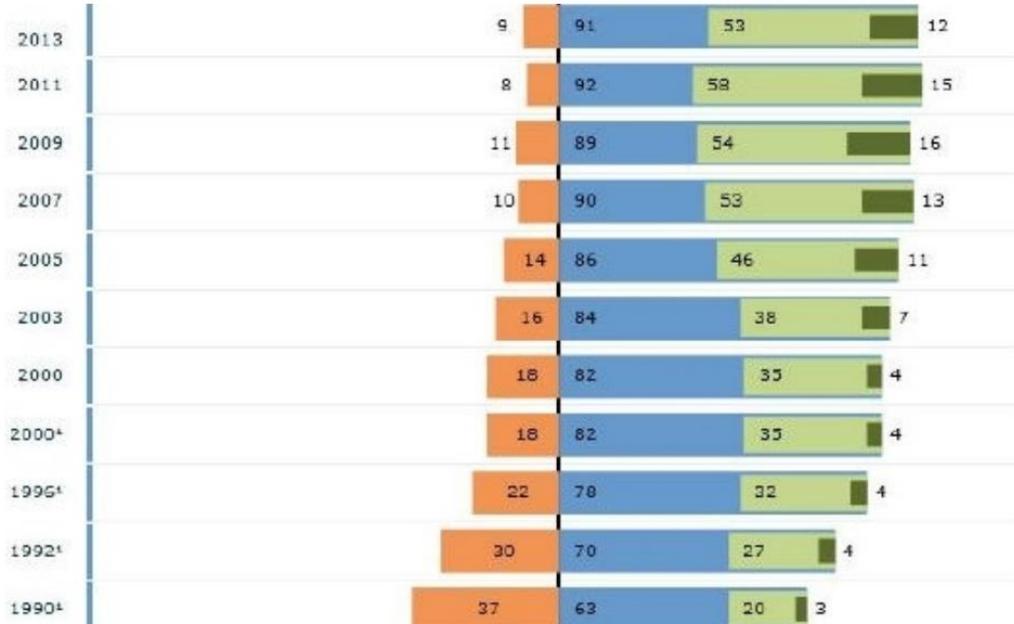
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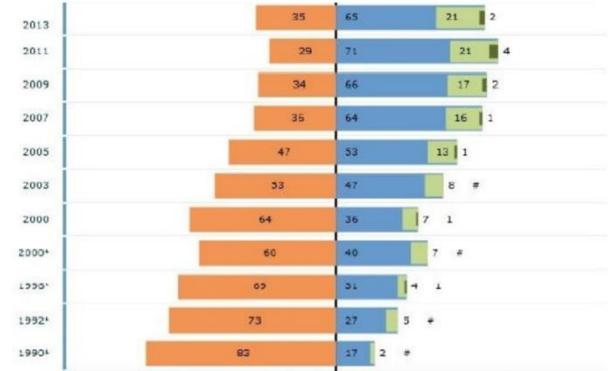
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# Texas NAEP, 8<sup>th</sup> Grade Math

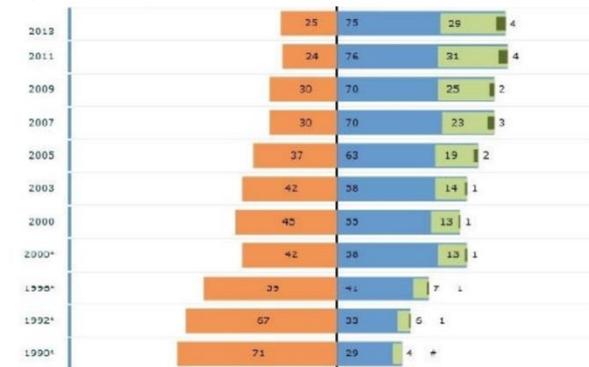
## White



## Black



## Hispanic



National Center for Education Statistics, U.S. Department of Education, 2014



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# Educational Attainment, 2010

## Texas

Race/ Ethnicity	Population Age 25 and Older	Less than High School	High School Diploma	Some College or Associates Degree	Bachelor Degree or More
Non-Hispanic White	8,212,303	8.0	25.3	32.6	34.1
Hispanic*	5,063,779	40.4	25.8	22.2	11.6
Black	1,762,154	13.7	30.3	36.3	19.7
Asian	632,826	14.3	15.2	18.5	52.0
Other	101,060	9.3	23.1	46.9	20.8
Total	15,772,122	19.3	25.6	29.2	25.9

Steve Murdock, Coalition for Hispanic Education, 2014



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# The Economic Impact

## Where we are

Singapore



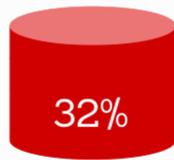
Canada



Germany



The U.S.



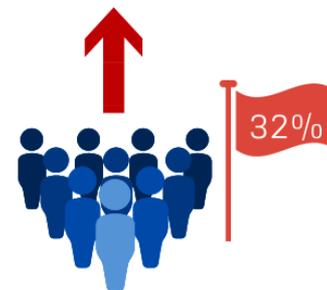
2012 High School Math Proficiency

Peterson and Hanushek: The Vital Link of Education and Prosperity, 2013.

## Where we need to be



Estimated additional growth dividend of \$77 trillion over the next 80 years



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# Texas Must Improve College Preparedness



38.6%

Require remediation in college



32%

25-34 year olds holding an Associates Degree or higher



16.7%

High school seniors who are college ready

## TX Graduation Rates

**52.5% African American**

**65.7% Hispanic**

**76.1% White**

**84.3% Asian**

Washington, DC: Georgetown Center on Education and the Workforce, 2010

2013 Texas Academic Performance Report



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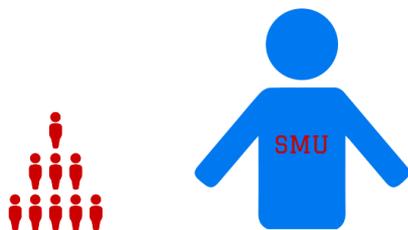


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# The Local Landscape

## Where we are

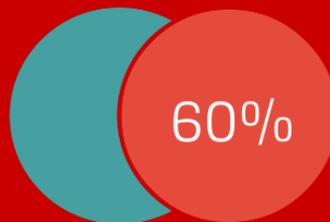
8-10% OF DISD STUDENTS  
ARE COLLEGE READY



Our Kids, Our Tomorrow. The Commit! Partnership,  
2012 Annual Report

2013 Texas Academic Performance Report

## Where we need to be



Of the jobs in the local workforce will require  
a post-secondary degree by 2030

## To Get There



be ready for  
for the next level



enroll  
in post-secondary  
education



complete some type of  
post-secondary  
education



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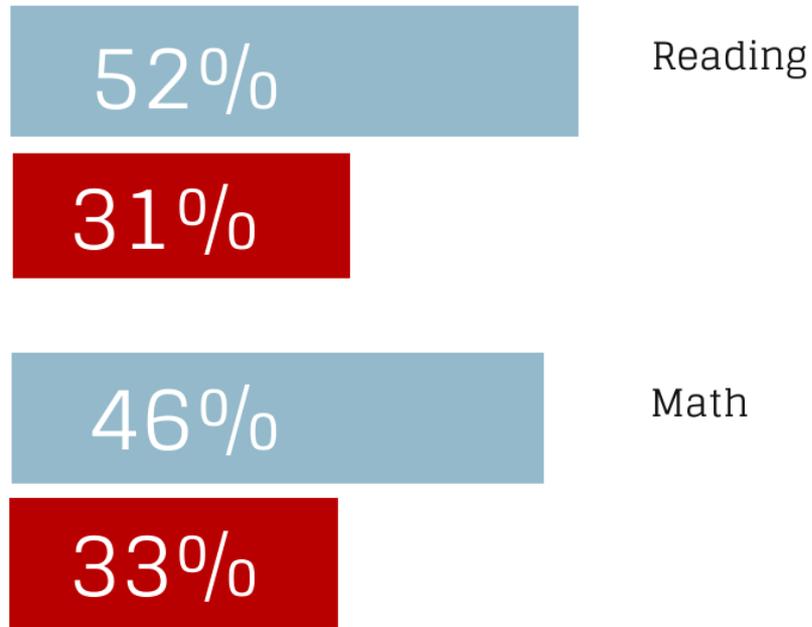
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# Local Districts

Richardson ISD  Dallas ISD 



## When Compared to our International Peers

George W. Bush Institute Global Report Card, 2009



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# Model for Reform



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Panel Discussion  
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