

# Using Outliers as Teachers

## Comparative Performance Monitoring under WIOA

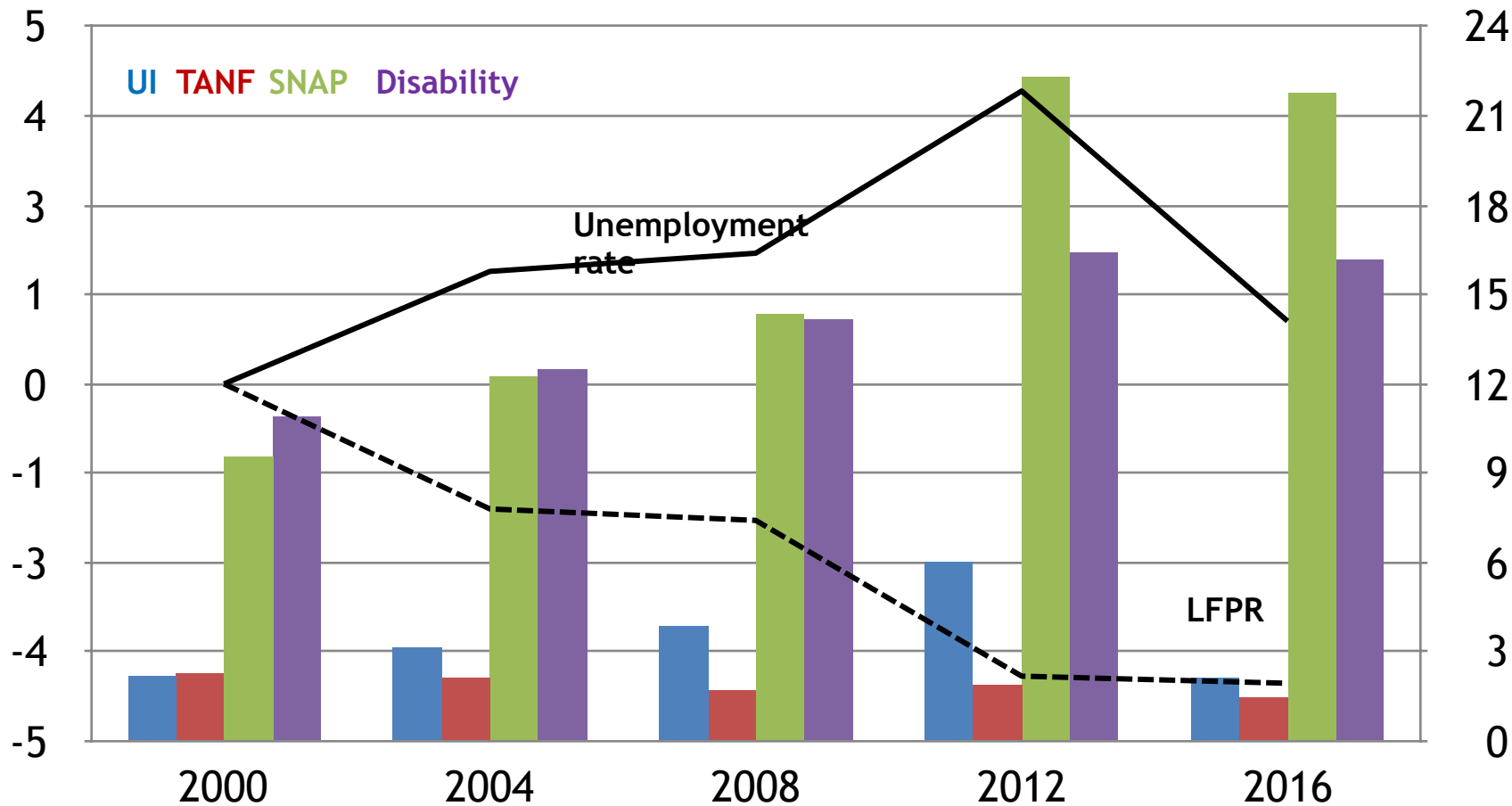
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University of Maryland  
Secretaries' Innovation Group  
December 5, 2017

# Means-Tested Programs and Work

## 2000-2016

Percentage point change

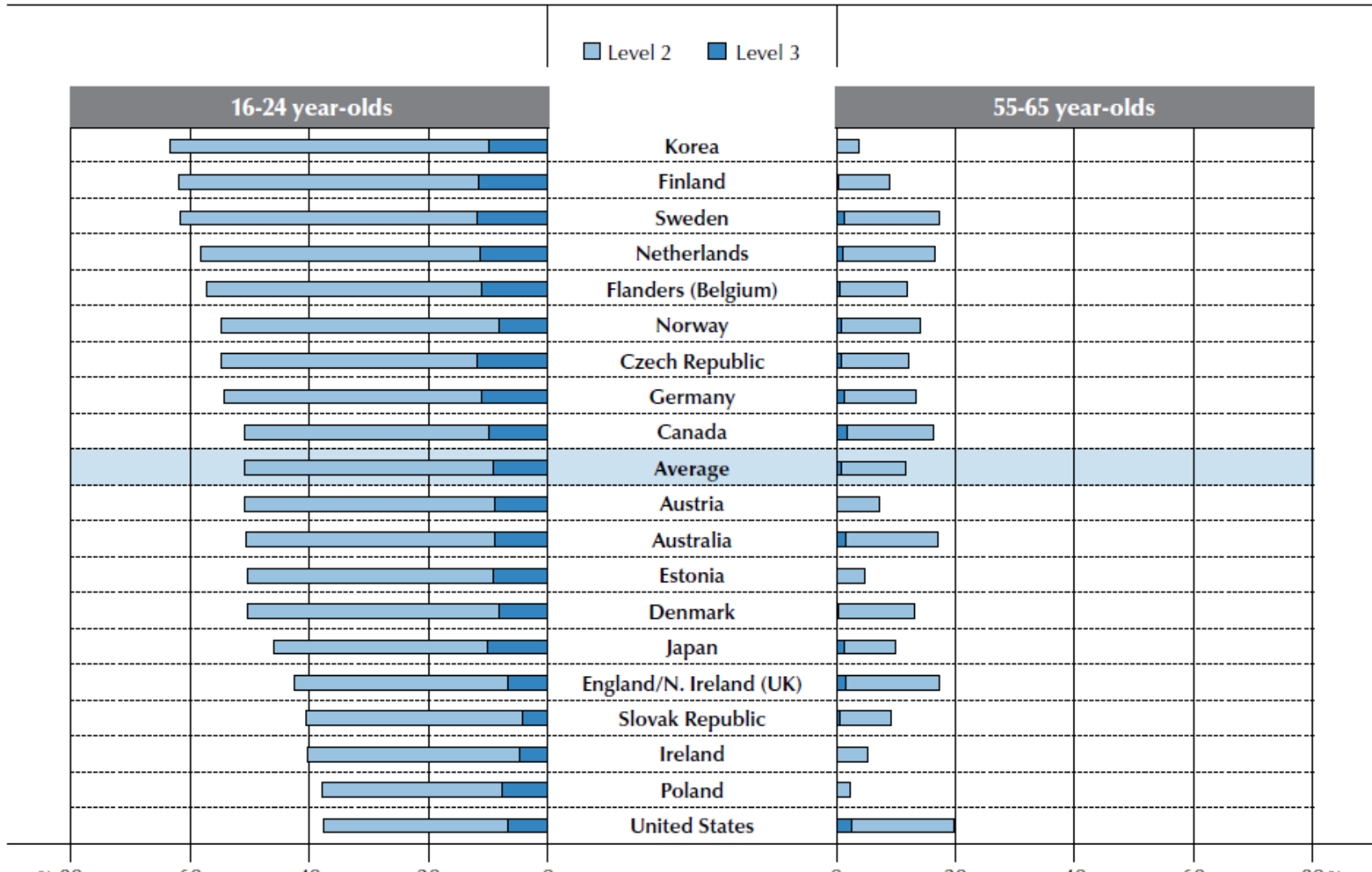
Millions of households



# Young People More Skilled –But US Falling Behind

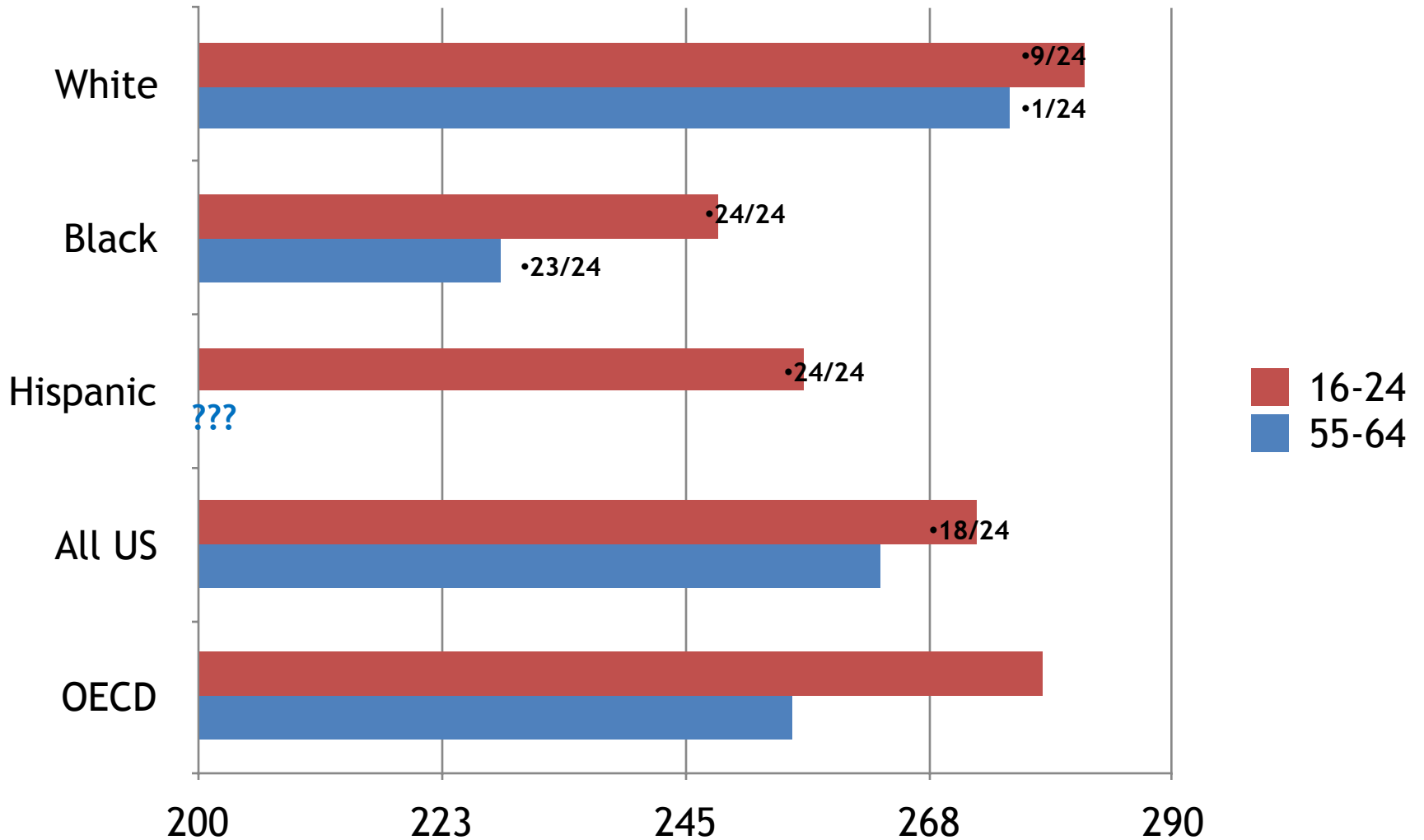
## Problem-solving proficiency among younger and older adults

Percentage of adults aged 16-24 and 55-65 scoring at Level 2 or 3 in problem solving in technology-rich environments



# Minorities Especially Falling Behind

## PIAAC (Literacy) 2012



# Find Promising Ideas to Test

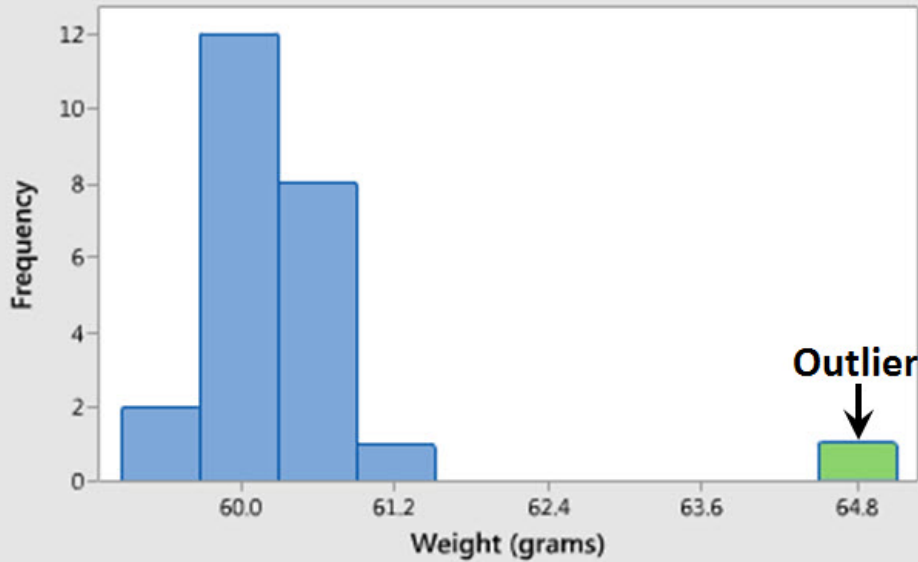


# Noncompliance vs. Innovation

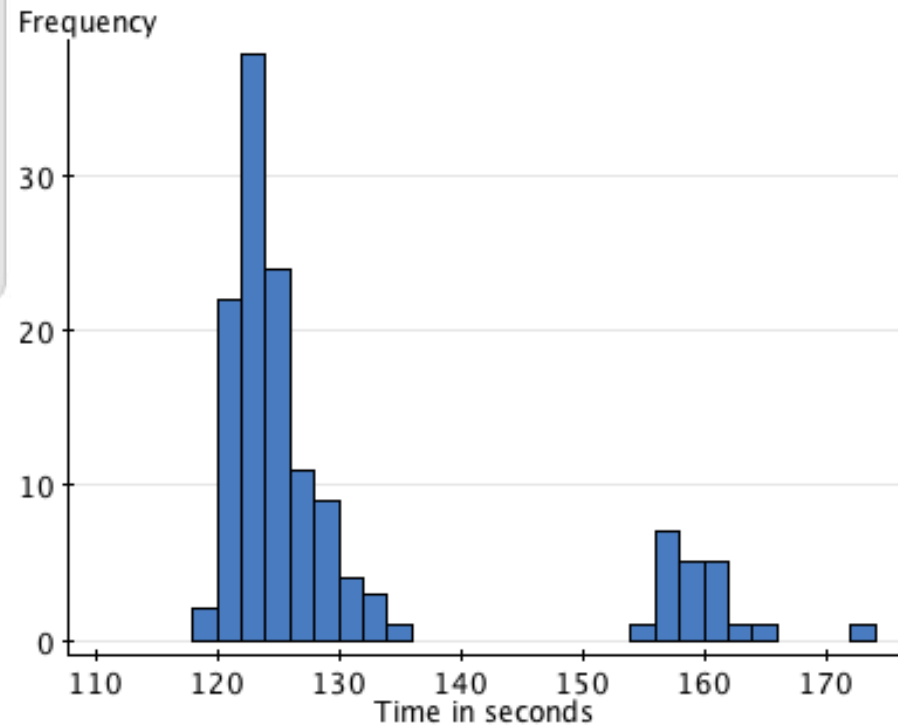


# Identifying Outliers

Histogram of Weight (grams)



Kentucky Derby Winners



# TANF Innovations?





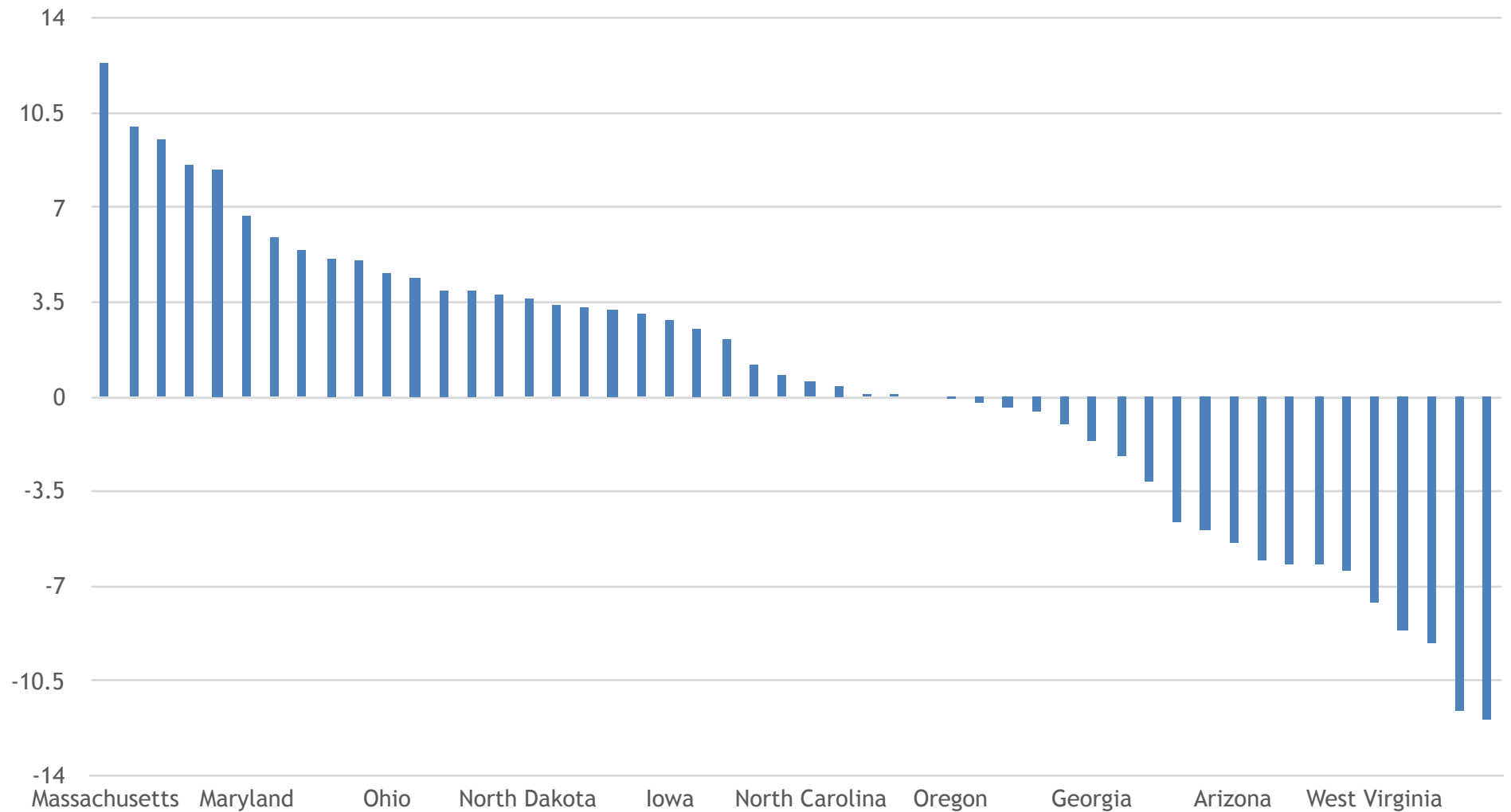
# High Quality RCTs Take Years

- *The Job Training Partnership Act (JTPA) evaluation (1986-1996)*--10 years
- *The National Job Corps Study (1993-2008)* -- 15 years
- *The Moving to Opportunity Study (1994-2012)* -- 18 years
- *The Employment Retention and Advancement Evaluation (1998-2010)* -- 12 years
- *Head Start (2000-2012)* -- 12 years
- *The Building Strong Families Project (2002-2012)* -- 10 years

# State Performance under National Assessment of Educational Progress

2013 NAEP

Months of Learning of 4<sup>th</sup> and 8<sup>th</sup> Graders



# Student-Level Adjustment Factors

Matthew Chingos, *Breaking the Curve* (2015)

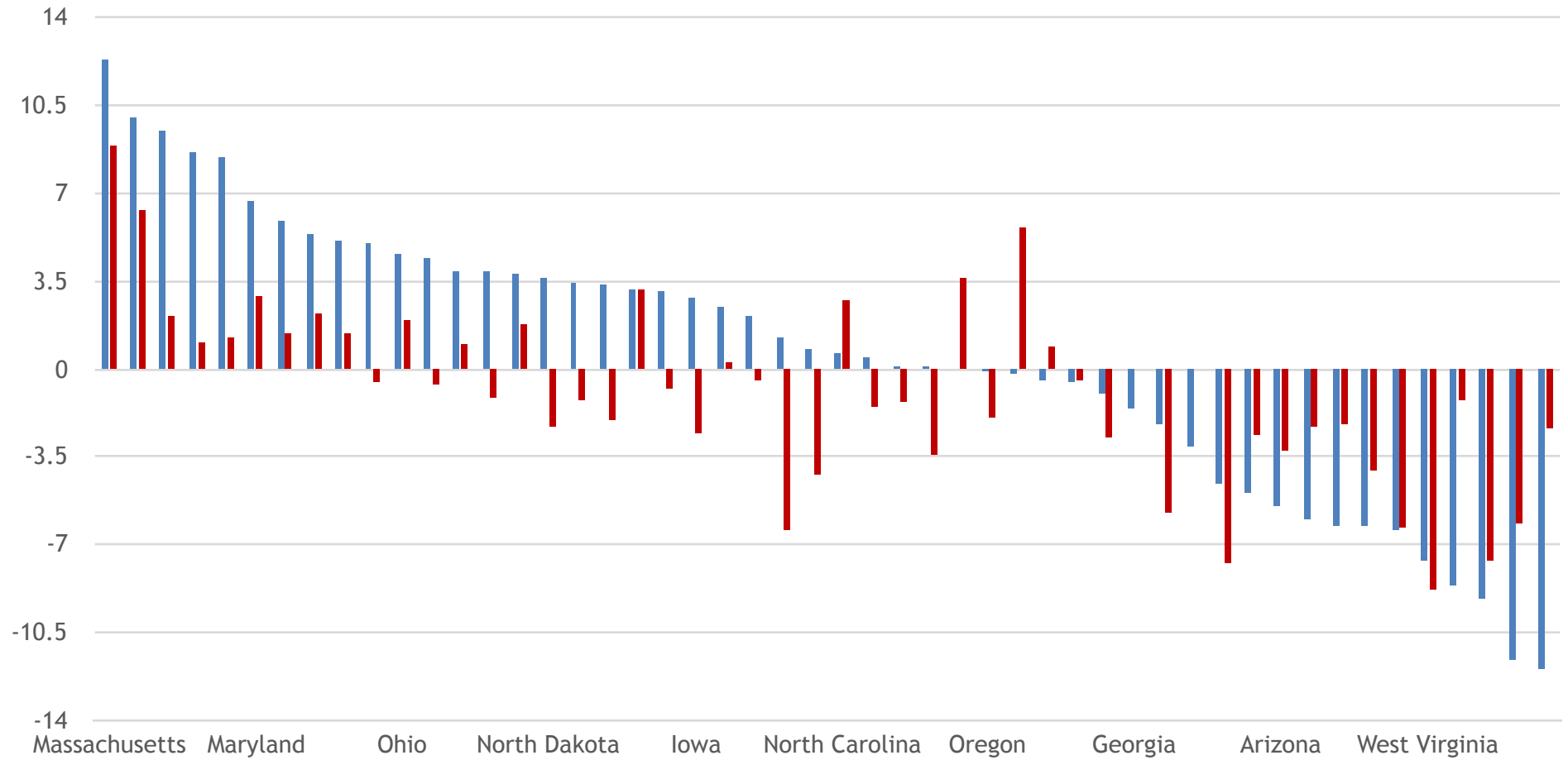
- “Gender”
- “Race and ethnicity”
- “Eligibility for free or reduced-price lunch”
- “Limited English proficient”
- “Special education”
- “Age”
- “Whether the student was given an accommodation on the ANEP exam (e.g., extra time or a separate room)”
- “Whether the student has various amenities in their home (e.g., computer, Internet, own room, dishwasher, and clothes dryer)”
- “Number of books in home”
- “Language spoken at home”
- “Family structure (e.g., two-parent, single-parent, foster)”

# Adjusted vs. Unadjusted Performance

## 2013 NAEP

### Months of Learning of 4<sup>th</sup> and 8<sup>th</sup> Graders

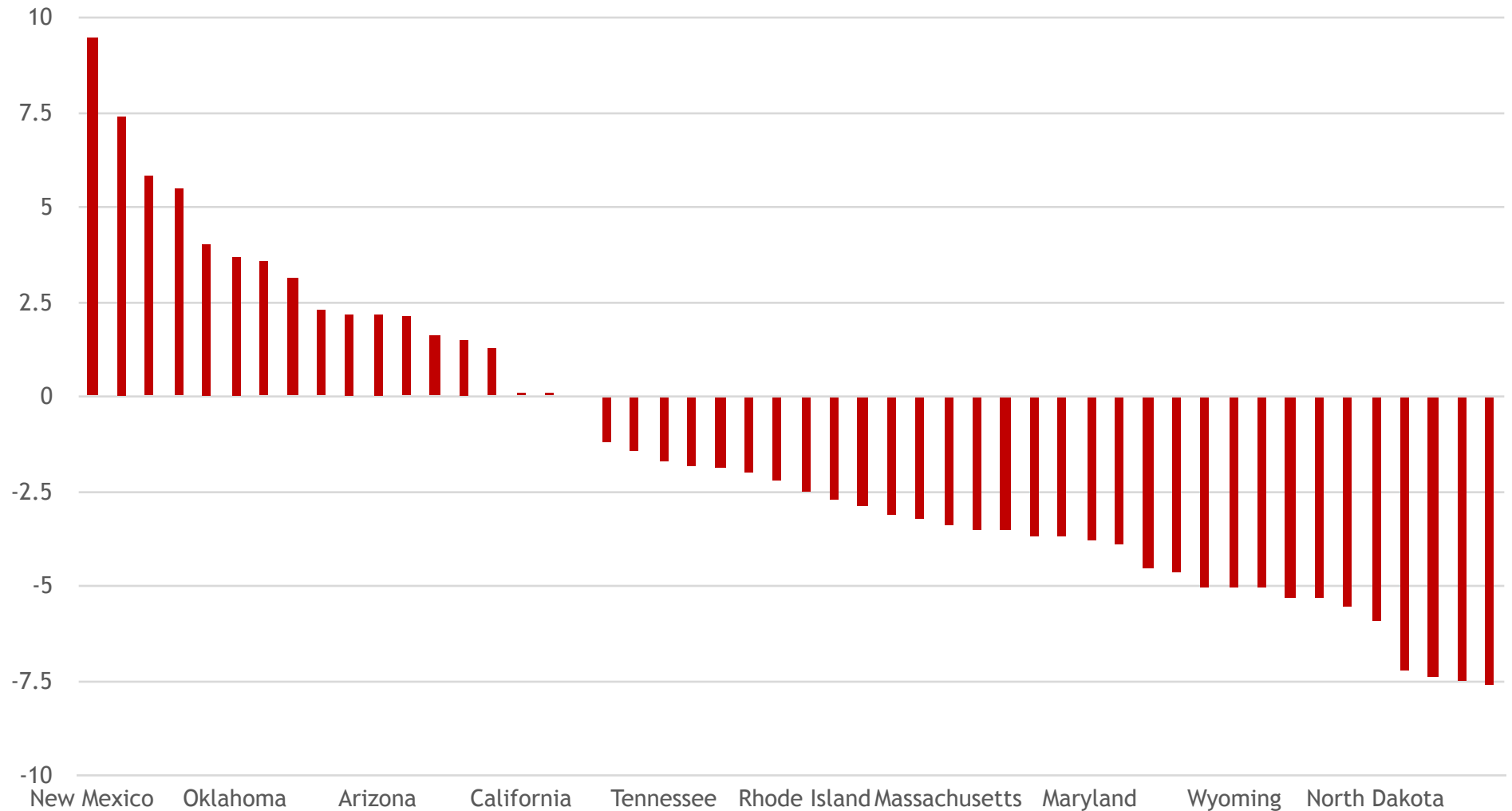
Unadjusted Adjusted



# State “Value-Added”---or Subtracted

2013 NAEP

Months of Learning of 4<sup>th</sup> and 8<sup>th</sup> Graders







# WIOA Adjustment Variables

“Unemployment rates”

“Job losses or gains in particular industries”

“Poor work history”

“Lack of work experience”

“Lack of educational or occupational skills attainment”

“Dislocation from high-wage and high-benefit employment”

“Low levels of literacy or English proficiency”

“Disability status”

“Homelessness”

“Ex-offender status”

“Welfare dependency”



# DoL Added Adjustment Variables

“Unemployment rates”

“Job losses or gains in particular industries”

“Poor work history”

“Lack of work experience”

“Lack of educational or occupational skills attainment”

“Dislocation from high-wage and high-benefit employment”

“Low levels of literacy or English proficiency”

“Disability status”

“Homelessness”

“Ex-offender status”

“Welfare dependency”

Age

Race/Ethnicity

Single parent

Sex

Veteran status

Low income

**Table 1. Explanatory Variables on Participant Characteristics**

Variable Description	Adult	DW	Youth	WP
Female	x	x	x	x
14<=Age<=15			x	
16<=Age<=17			x	
Age=18			x	
19<=Age<=20			x	
26<=Age<=35	x	x		x
36<=Age<=45	x	x		x
46<=Age<=55	x	x		x
56<=Age<=65	x	x		x
66<=Age	x	x		x
Hispanic ethnicity	x	x	x	x
Race: Asian (not Hispanic)	x	x	x	x
Race: Black (not Hispanic)	x	x	x	x
Race: Hawaiian/Pacific Islander (not Hispanic)	x	x	x	x
Race: American Indian or Native Alaskan (not Hispanic)	x	x	x	x
Race: More than one (not Hispanic)	x	x	x	x
Highest grade completed: Less than High School graduate	x	x	x	x
Highest grade completed: High school equivalency	x	x	x	x
Highest grade completed: Some college	x	x	x	x
Highest grade completed: Certificate or Other Post-Secondary Degree	x	x	x	x
Highest grade completed: Associate degree	x	x		x
Highest grade completed: Bachelor degree	x	x		x
Employed at participation	x	x	x	

Variable Description	Adult	DW	Youth	WP
Individual with a disability	x	x	x	
Veteran	x	x		
Had earnings in 2nd and 3rd preprogram quarters	x	x		x
Had earnings in 3rd preprogram quarter	x	x		x
Had earnings in 2nd preprogram quarter	x	x		x
Received services financially assisted under the Wagner-Peyser Act	x	x	x	
Limited English-language proficiency	x	x	x	
Single parent	x	x		
Low income	x	x	x	
TANF recipient	x	x	x	
Other public assistance recipient	x	x	x	
Homeless	x	x	x	
Offender	x	x	x	
Unemployment insurance claimant, non-exhaustee	x	x	x	
Unemployment insurance claimant, exhaustee	x	x	x	
Received supportive services	x	x		
Received needs-related payments	x	x		
Received intensive services	x	x		
Received training services	x	x		
Established Individual Training Account (ITA)	x	x		
Pell grant recipient	x	x	x	
Received pre-vocational activity services	x	x		

**Table 2. Explanatory Variables on Economic Conditions**

<b>Economic Variable</b>	<b>Definition</b>
UnempRate	Not seasonally adjusted quarterly unemployment rate
NatResEmp	Percentage of total employment in NAICS 1133-Logging, and Sector 21-Mining
ConstEmp	Percentage of total employment in Sector 23-Construction
ManfEmp	Percentage of total employment in Sectors 31, 32, 33-Manufacturing
TechEmp	Percentage of total employment in Sector 51-Information, Sector 52-Finance and Insurance, Sector 53-Real Estate and Rental and Leasing, Sector 54-Professional, Scientific, and Technical Services, Sector 55-Management of Companies and Enterprises, and Sector 56-Administrative and Waste Services
EdHealthEmp	Percentage of total employment in Sector 61-Educational Services, and Sector 62-Health Care and Social Assistance
LeisHospEmp	Percentage of total employment in Sector 71-Arts, Entertainment, and Recreation, and Sector 72-Accommodations and Food Services
OtherServEmp	Percentage of total employment in Sector 81-Other Services
PublicAdminEmp	Percentage of total employment in Federal, State, and Local Government

# Missing Detail in Adjustment Variables

“Unemployment rates”

Employment/Population ratio

Long-term unemployment

“Job losses or gains in particular industries”

“Poor work history”

“Lack of work experience”

“Lack of educational or occupational skills attainment”

“Dislocation from high-wage and high-benefit employment”

“Low levels of literacy or English proficiency”

“Disability status”

“Homelessness”

“Ex-offender status”

“Welfare dependency”

Age

Race/Ethnicity

Single parent

Divorced

Never Married

# Full Universe of Adjustment Variables

WIOA Adjusters ("Observed")	Adjusters Not in WIOA ("Observable")	"Unobservable"
"Unemployment rates"	Long-term unemployment	Perseverance
"Job losses or gains in particular industries"	Labor force participation	Self-control
"Poor work history"	Family income	Trust
"Lack of work experience"	Size of household	Attentiveness
"Lack of educational or occupational skills attainment"	Child care availability	Self-esteem
"Dislocation from high-wage and high-benefit employment"	Religion	Ability to engage productively in society
"Low levels of literacy or English proficiency"	Life satisfaction	Openness to experience
"Disability status"	Presence of young children	Humility
"Homelessness"	Marital history	Empathy
"Ex-offender status"	Number of earners in household	Tolerance of diverse opinions
"Welfare dependency"	Disability status of child	Resilience to adversity
Age		Culture
Race/Ethnicity		Reservation wage
Sex		Social capital
Single parent		
Veteran status		

# Variables Included in a Regression Model

WIOA Adjusters ("Observed")	Adjusters Not in WIOA ("Observable")	Unobservable
"Unemployment rates"	Long-term unemployment	Perseverance
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Single parent		
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# Maximum Applicability of Fixed Effects

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Age		Culture
Race/Ethnicity		Social capital
Sex		
Single parent		
Veteran status		



# Regression with Fixed Effects

WIOA Adjusters ("Observed")	Adjusters Not in WIOA ("Observable")	Unobservable
"Unemployment rates"	Time Variant Long-term unemployment	Time Variant (?) Community attitudes
"Job losses or gains in particular industries"	Labor force participation	Culture
"Poor work history"	Family income	Access to transportation
"Lack of work experience"	Size of household	Time Invariant (?)
"Lack of educational or occupational skills attainment"	Life satisfaction	Perseverance
"Dislocation from high-wage and high-benefit employment"	Presence of young children	Self-control
"Low levels of literacy or English proficiency"	Marital history	Trust
"Disability status"	Number of earners in household	Attentiveness
"Homelessness"	Disability status of child	Self-esteem
"Ex-offender status"	Time Invariant Disability status of child	Ability to engage productively in society
"Welfare dependency"	Religion	Openness to experience
Age	Child care availability	Humility
Race/Ethnicity		Empathy
Sex		Tolerance of diverse opinions

Regression

Fixed Effects

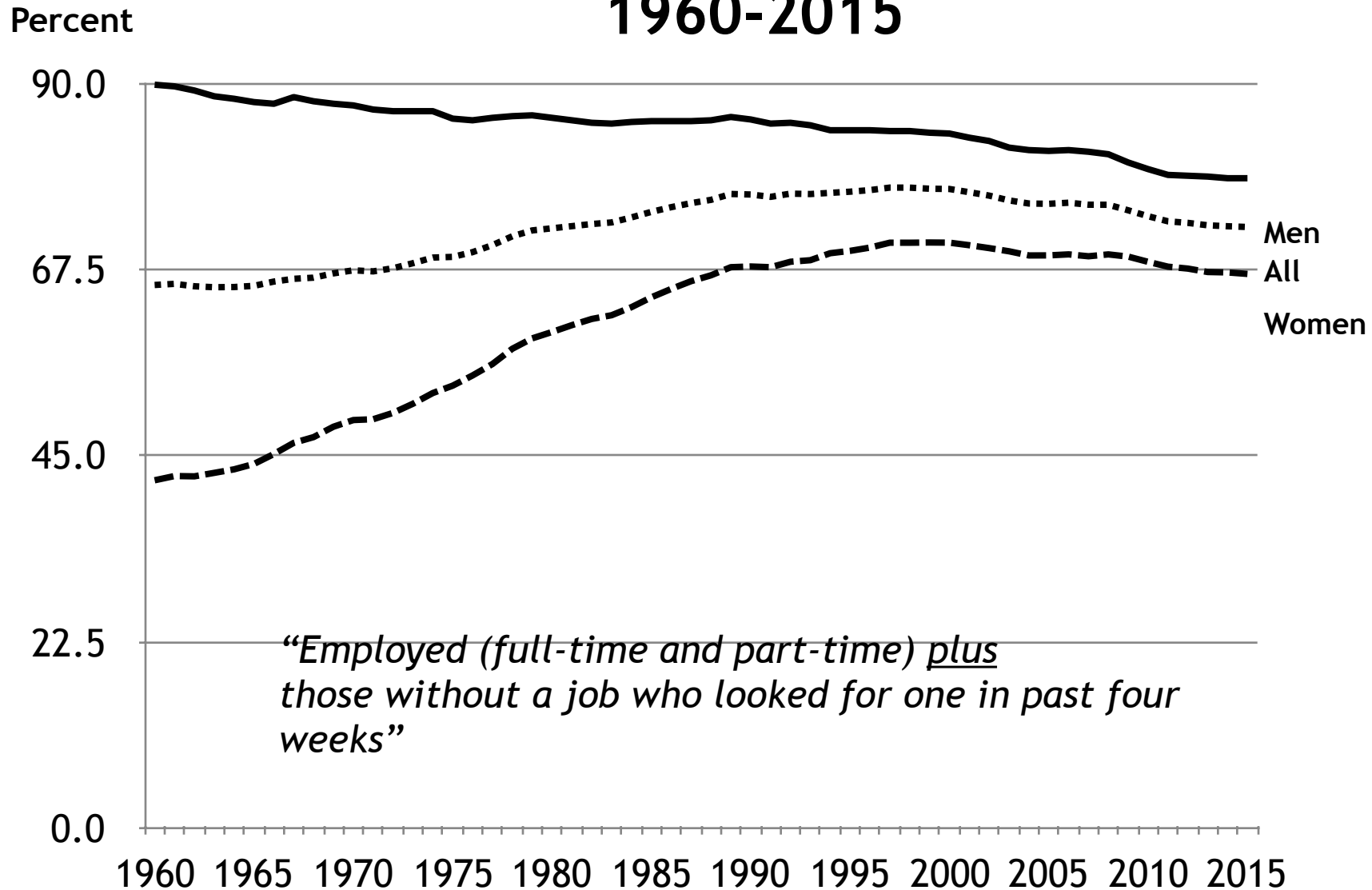




# US Labor Force Participation Rate

## Working Age Population (16-64)

### 1960-2015



		Observed	Observable	Unobservable
Regression	Unemployment rates	X		
	Job losses or gains in particular industries	X		
	Poor work history	X		
	Lack of work experience	X		
	Lack of educational or occupational skills attainment	X		
	Dislocation from high-wage and high-benefit employment	X		
	Low levels of literacy or English proficiency	X		
	Disability status	X		
	Homelessness	X		
	Ex-offender status	X		
	Welfare dependency	X		
	Age	X		
	Race/Ethnicity	X		
	Single parent	X		
Fixed Effects	Religion		X	
	Long-term unemployment		X	
	Culture			X
	Motivation			X

		Observed?	Individual-level?
Regression	Age	X	X
	Race/ethnicity	X	X
	Education	X	X
	Disability Status	X	X
	Veteran status	X	X
	English-language proficiency	X	X
	Homeless status	X	X
	Previous employment status	X	X
	Ex-offender	X	X
	Low income	X	X
	Single parent	X	X
	Recipient of public assistance	X	X
Unaccounted	Motivation		X
	Grit		X
Regression	Unemployment rate	X	
	Employment in various sectors	X	
Fixed Effects	Culture		
	Economic perception		
	Corruption		