

Early Childhood Education

Economics and Challenges

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The Economic Case for Early Childhood Care

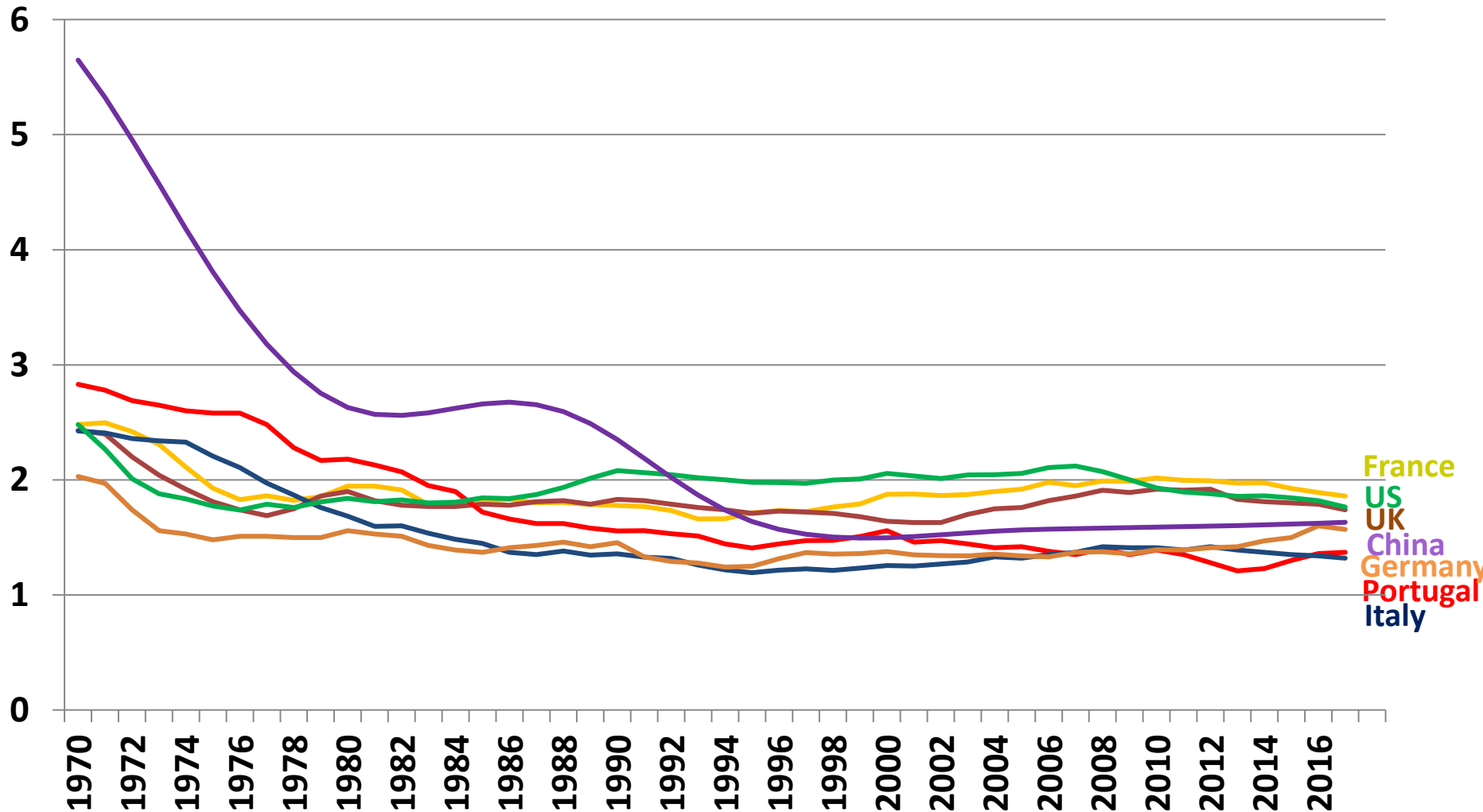
- A strong economy needs a strong workforce
- A strong workforce needs as many good workers as possible
- A worldwide decline in births and rise in single parenthood
- Early childhood care helps parents of young children work
 - And, quality care can benefit children

Fewer Children

Fertility in Selected EU Countries, China, and US

1970-2017

of children per woman



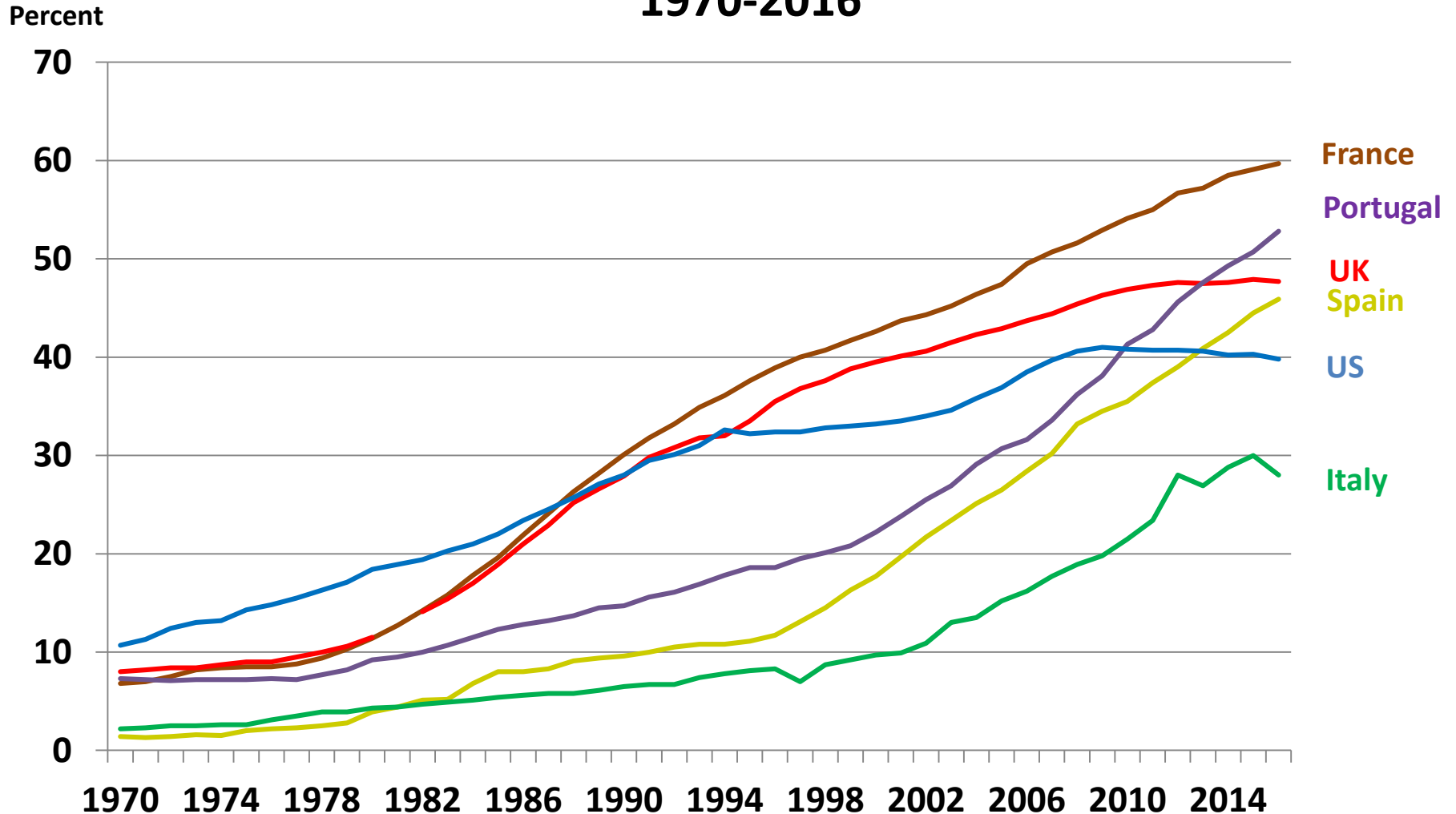
Caring for Children and Elderly

The Challenge of the Demographic Transition



More Single Parents

% Nonmarital Births in Selected EU Countries and US
1970-2016



Part-Time, Full-Time, and Non-Employment

US Mothers, 2018

Percent of all mothers

70%

60%

50%

40%

30%

20%

10%

0%

With child(ren) under age 3 With child(ren) under age 6 With child(ren) ages 6-17 With child(ren) under age 18



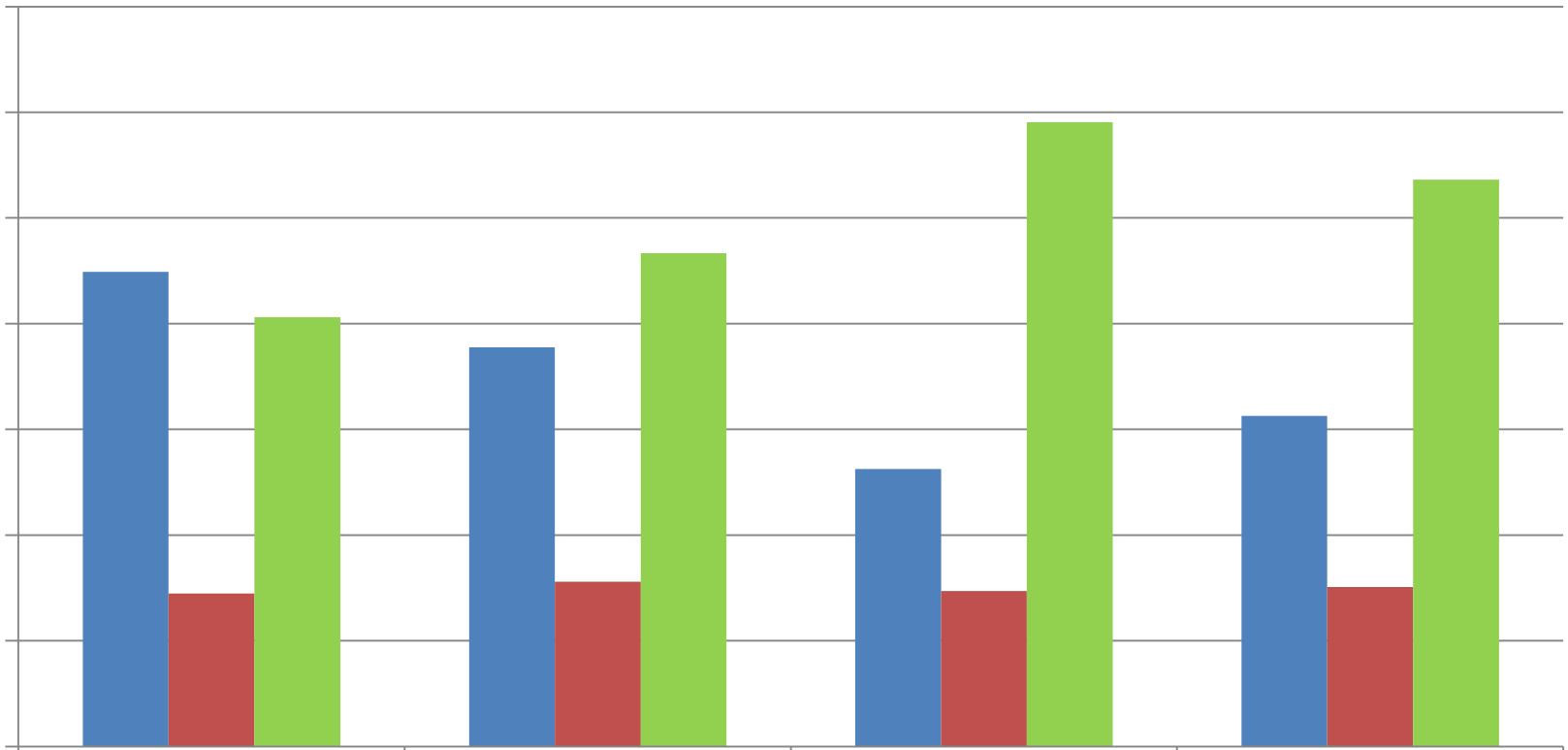
Not working



Part time



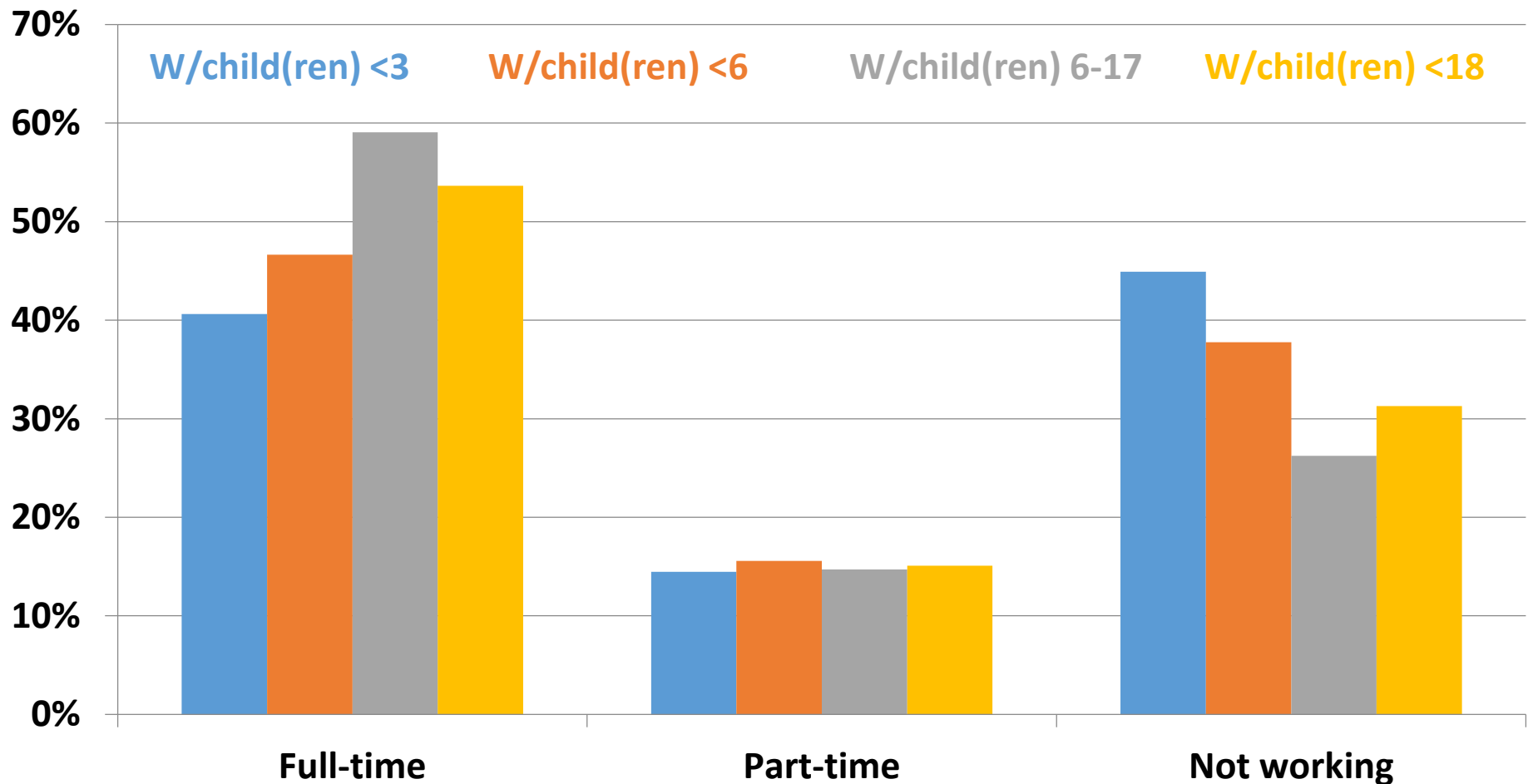
Full time



Part-Time, Full-Time, and Non-Employment

US Mothers, 2018

Percent of all mothers



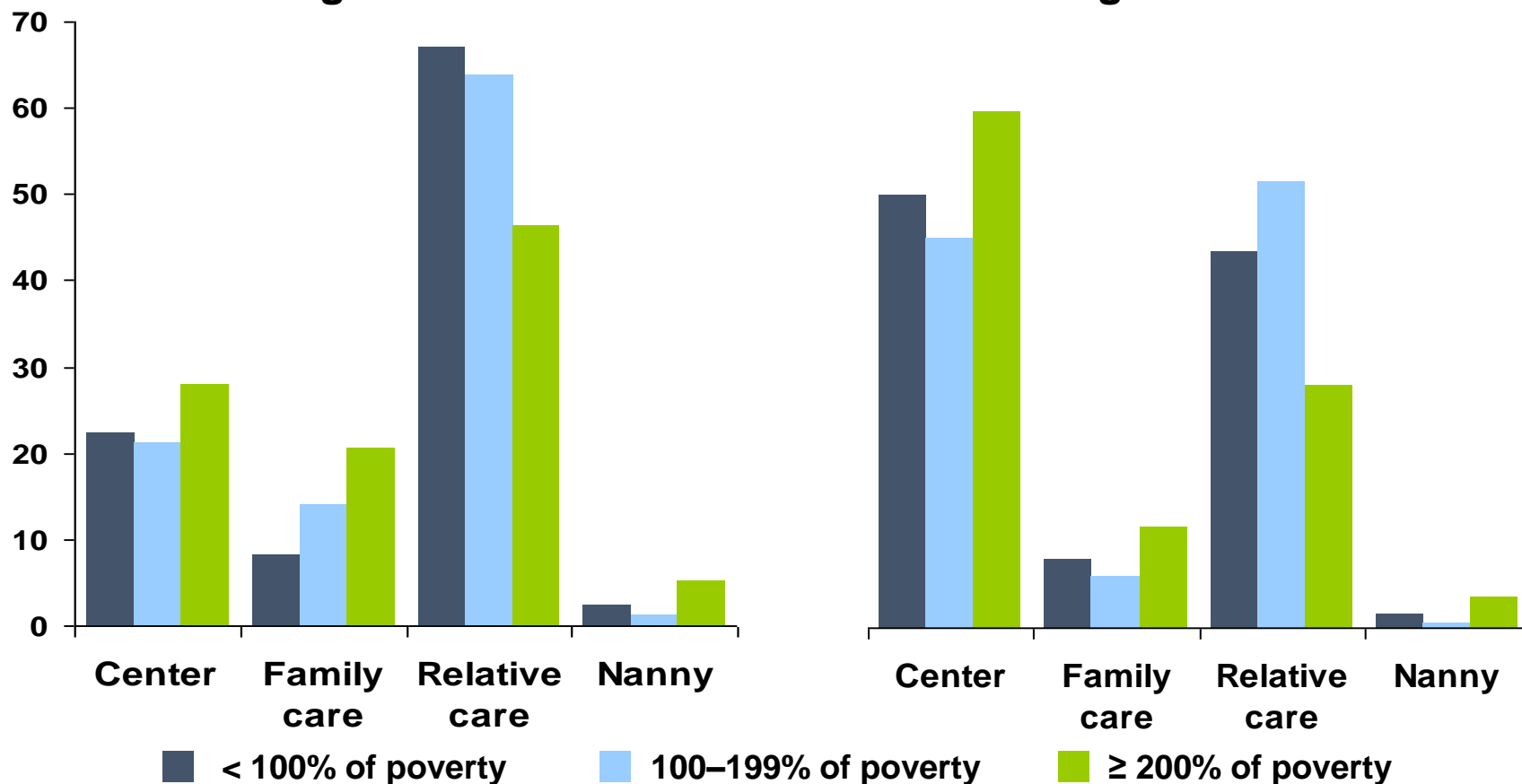
Child Care Arrangements

Working Mothers By Child's Age and Poverty Status 2004

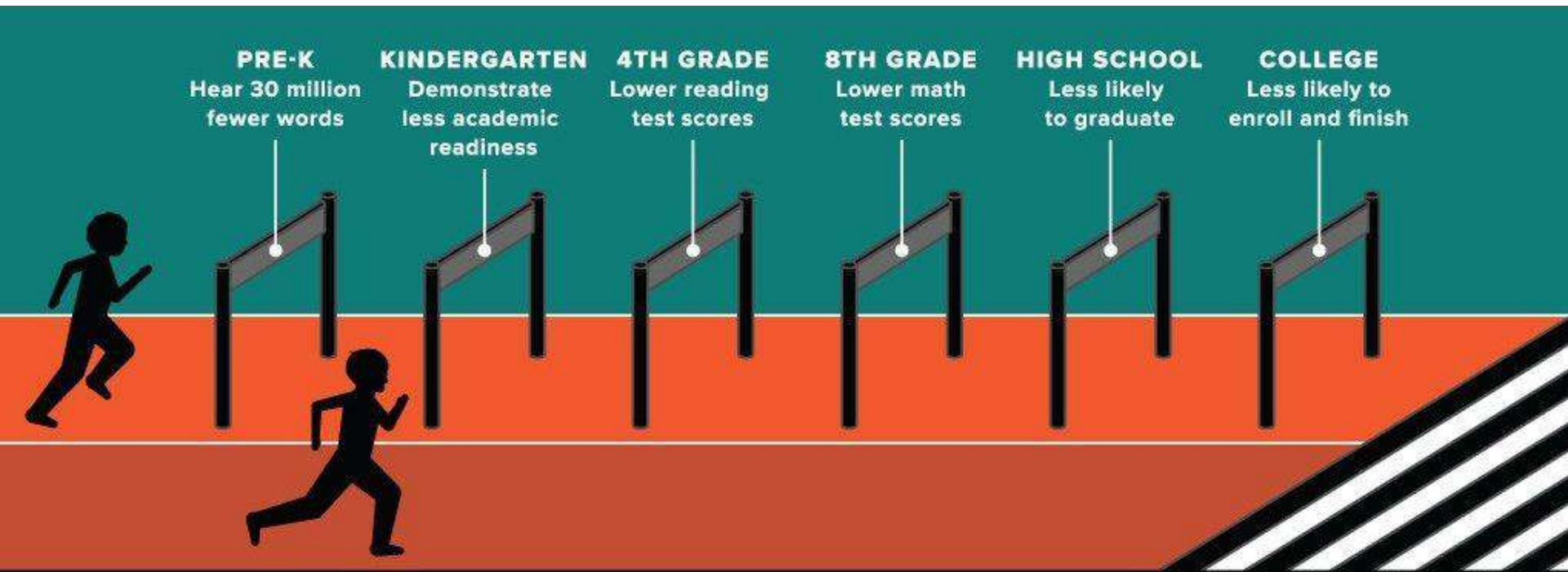
Percent in care

Ages 0–2

Ages 3–5



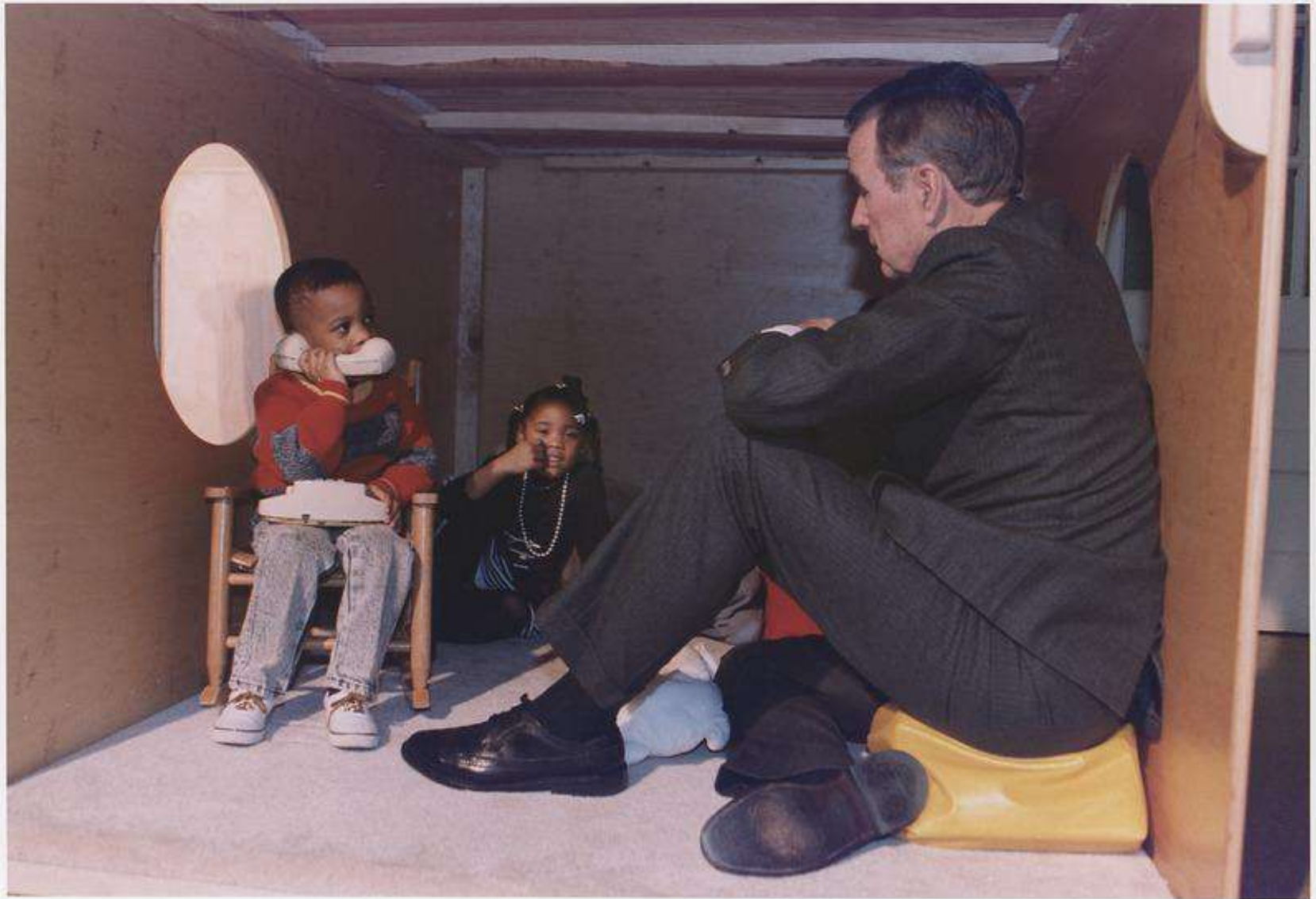
Disadvantaged Children and the Long-Term Achievement Gap



An Intuitively Attractive Idea



Bush in a Box



No Real Programmatic Model

High/Scope Perry Preschool Project

	Differences in raw scores		Measure	Differences (percent change)
	IQ	CAT	Grade retention	-13%
Program entry	1	N/A	Ever in EMI program (special ed.)	-56%*
End of year 1	11*	N/A		
End of year 2	11*	N/A	HS Graduation	44%*
Age 6	4*	N/A	Males	-7%
Age 7	4*	7	Females	163%*
Age 8	1	12	Health	1 of 14 results ss
Age 9	0	22*	Behavior	No results ss
Age 10	0	27*	Crime (age 27)	
Age 11	N/A	9	Lifetime arrests	-50%*
Age 14	-1	21*	Convictions	Not ss

Cherry Picking Cost-Benefit Results

7:1
Perry (age 27)

3.8:1
Chicago

0.6:1
NFP, Elmira
(low risk)

7:1
Chicago

12.9:1
Perry (age 40)

3.6:1
Abecedarian

2.9:1
Chicago*

1:0.6
Abecedarian*

4:1
NFP, Elmira
(high risk)

2.5:1
Perry (age 27)*

Too Many Failed Programs?

IHDP 1985-1988

- Low-birth weight, pre-term infants and their parents (n = 985 children)
- Home visits, parenting education, and early childhood education
- \$20,400 per child per year
- No significant impacts, initial IQ gains fade

CCDP 1990-1995

- Poor children under age 1 and their parents (n = 4,410 families)
- Case management, parenting education, early childhood education, and referrals to community-based services
- \$19,000 per family per year (\$60 million annually)
- No significant impacts

Early Head Start 1996-2008

- Poor children ages 0-2 and their parents (n ≈ 3,000 families)
- Child development, parenting education, child care, and family support services
- \$18,500 per child per year (\$700 million annually)
- No significant impacts

Head Start Study

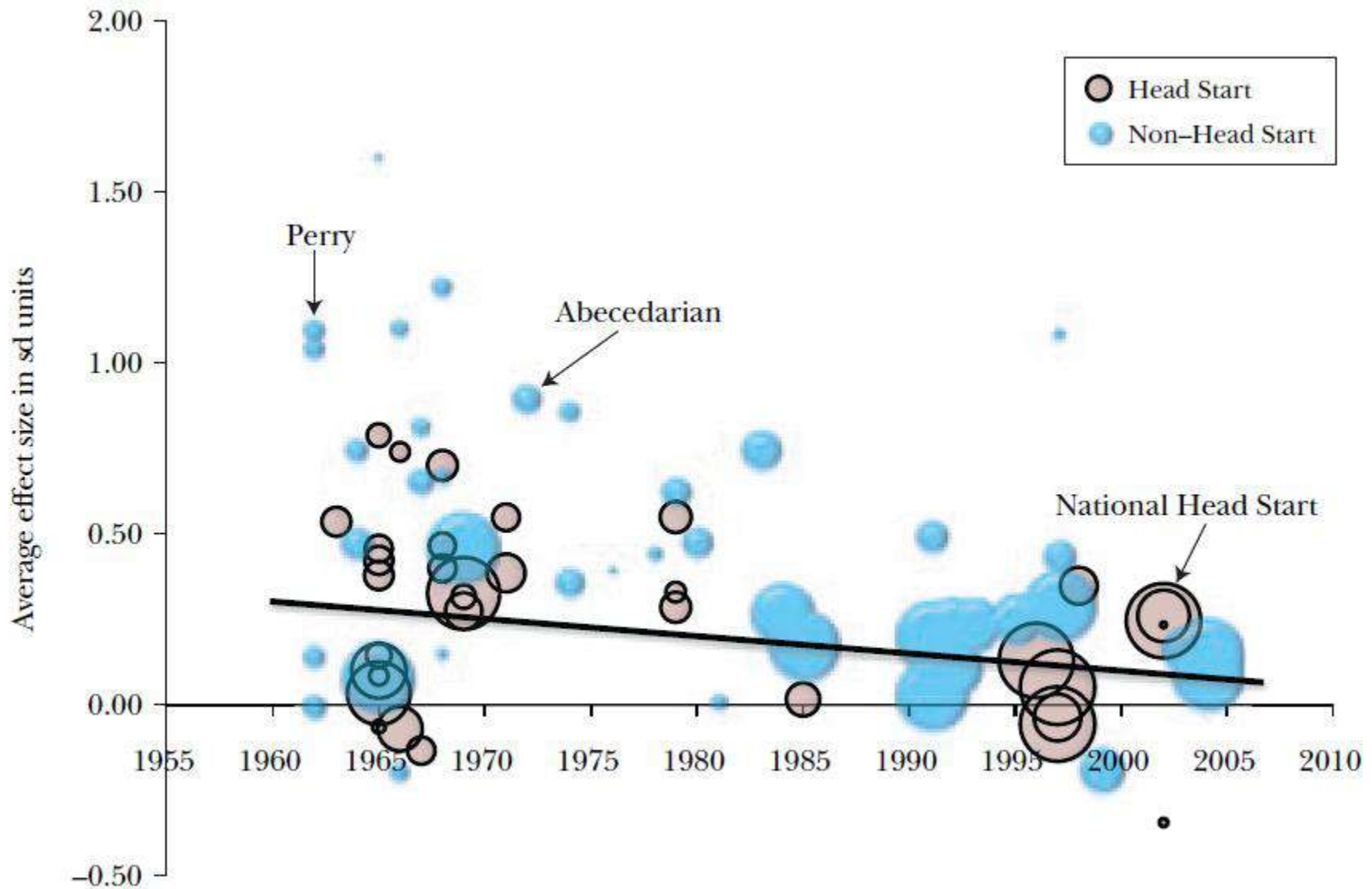
Cognitive and Social-Emotional Outcomes

Measure	Age 4 (Head Start Year)	K	1 st Grade	3 rd Grade
Language, Literacy, and Pre-Writing				
Color Identification	0.16	NA	NA	NA
Pre-Writing (McCarthy Draw a Design)		NA	NA	NA
Emergent Literacy Scale (parent report)	0.31	NA	NA	NA
Letter Naming	0.25		NA	NA
Test of Phonological Processing (CTOPPP Elision)			NA	NA
Receptive Vocabulary (PPVT)	0.09		0.09	
Letter-Word Identification (WJIII)	0.22			
Spelling (WJIII)	0.15			NA
Oral Comprehension (WJIII)				NA
Pre-Academic Skills (WJIII)	0.19			NA
Phonetic Skills/ Word Attack (WJIII)	NA			NA
Basic Reading (WJIII)	NA			NA
Academic Applications (WJIII)	NA	NA		NA
Academic Skills (WJIII)	NA	NA		NA
Passage Comprehension (WJIII)	NA	NA		NA
ECLS-K Reading	NA	NA		0.11
Writing Sample (WJIII)	NA	NA		NA
Spanish Language				
Receptive Vocabulary (TVIP)				NA
Batería WM Identificación de letras y palabras				
Math				
One-to-One Counting (Counting Bears)		NA	NA	NA
Applied Problems (WJIII)				
Quantitative Concepts (WJIII)	NA			NA
Math Reasoning (WJIII)	NA			NA
Calculation (WJIII)	NA	NA		
School Performance				
School Accomplishments	NA			NA
Promotion (parent report)	NA			
Language and Literacy Ability	NA			
Math Ability	NA			
Math Skills	NA	NA	NA	
Reading/Language Arts Skills	NA	NA	NA	
Social Studies and Science Ability	NA			NA

Measure	Age 4 (Head Start Year)	K	1 st Grade	3 rd Grade
Parent-Reported Measures				
Aggressive Behavior				-0.13
Hyperactive Behavior				
Withdrawn Behavior			-0.13	
Total Problem Behavior				-0.12
Social Competencies				NA
Social Skills and Positive Approaches To Learning				
Closeness with Parent				NA
Conflict with Parent				NA
Positive Parent-Child Relationships				NA
Teacher-Reported Measures				
Aggressive (ASPI)	NA			NA
Interactive/Hyperactive (ASPI)	NA			
Withdrawn/Low Energy (ASPI)	NA			NA
Oppositional (ASPI)	NA			NA
Problems with Peer Interaction (ASPI)	NA			NA
Shy/Socially Reticent (ASPI)	NA		0.19	NA
Problems with Structured Learning (ASPI)	NA			NA
Problems with Teacher Interaction (ASPI)	NA		0.13	NA
Closeness with Teacher	NA			-0.13
Conflict with Teacher	NA			
Positive Teacher-Child Relationships	NA			-0.14
Conduct Problems-% in Normal Category	NA	NA	NA	
Emotional Symptoms-% in Normal Category	NA	NA	NA	-0.24
Hyperactivity-% in Normal Category	NA	NA	NA	
Peer Problems-% in Normal Category	NA	NA	NA	
Pro-social Behavior-% in Normal Category	NA	NA	NA	
Total Difficulties-% in Normal Category	NA	NA	NA	
Social Competency	NA	NA	NA	
Child-Reported Measures				
Externalizing	NA	NA	NA	
Internalizing	NA	NA	NA	
Peer Relations	NA	NA	NA	-0.14
School	NA	NA	NA	

Is a New Model Needed?

The Declining “Effectiveness” of ECE



What has Changed Since Perry Preschool?

- **“Counterfactual” has changed**
 - From 1970-2000, % of preschoolers in the bottom quintile of income with mothers w/o a high school diploma fell from 71% to 37%
[Duncan and Magnuson (2013)]
- **Demographics have changed**
 - More working mothers
 - More Latinos and more Asians
- **Program scale has changed**
 - Large, bureaucratic programs

Programmatic and Policy Questions

- Content: Cognitive, socialization, or both?
- How young? What about parental leave?
- Who benefits? Who should benefit?
- How to ensure quality?
- What about cost?

Programmatic and Policy Questions

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With Whom Will the Children Play?



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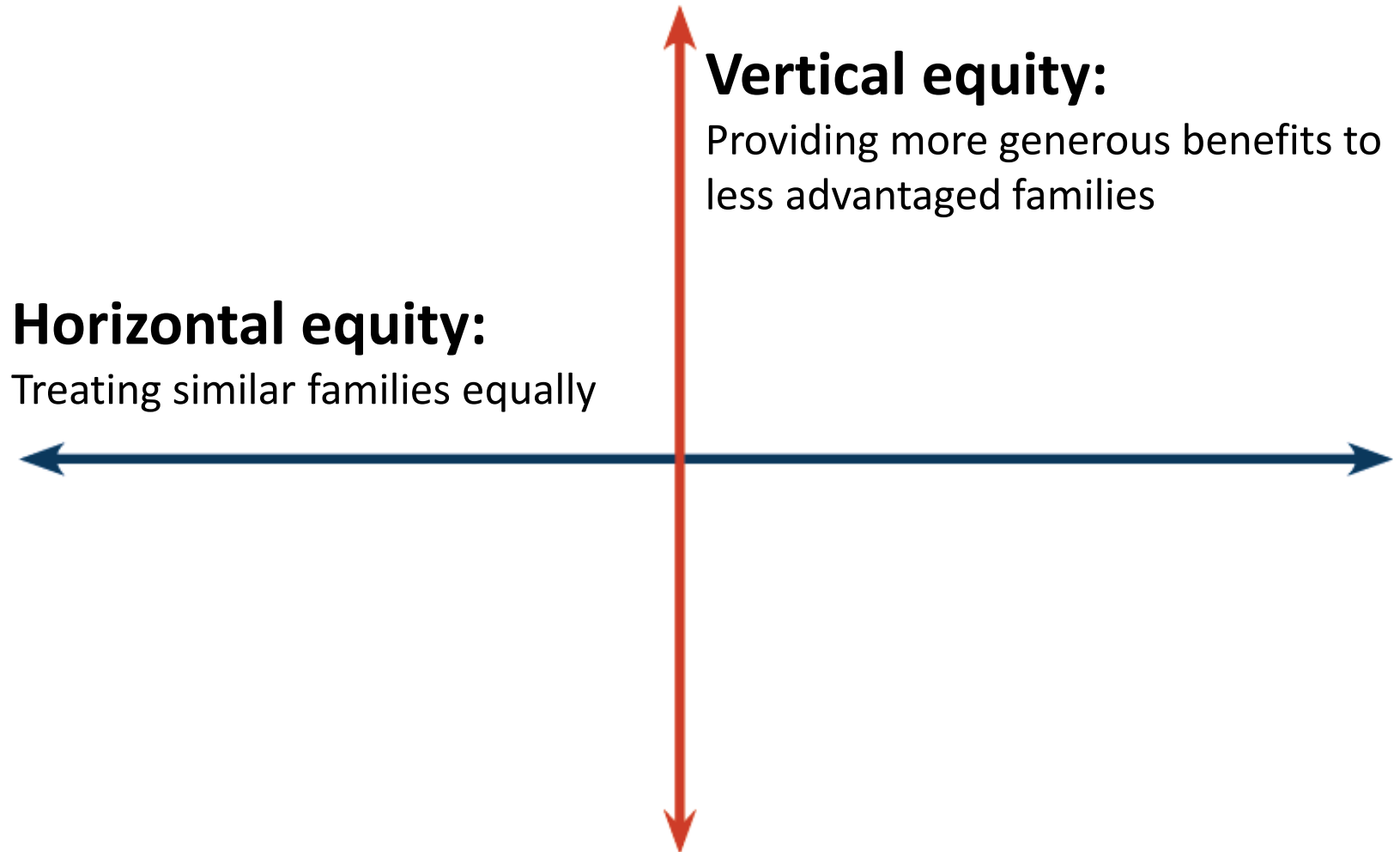
Many Parents Want to Care for their Young Children



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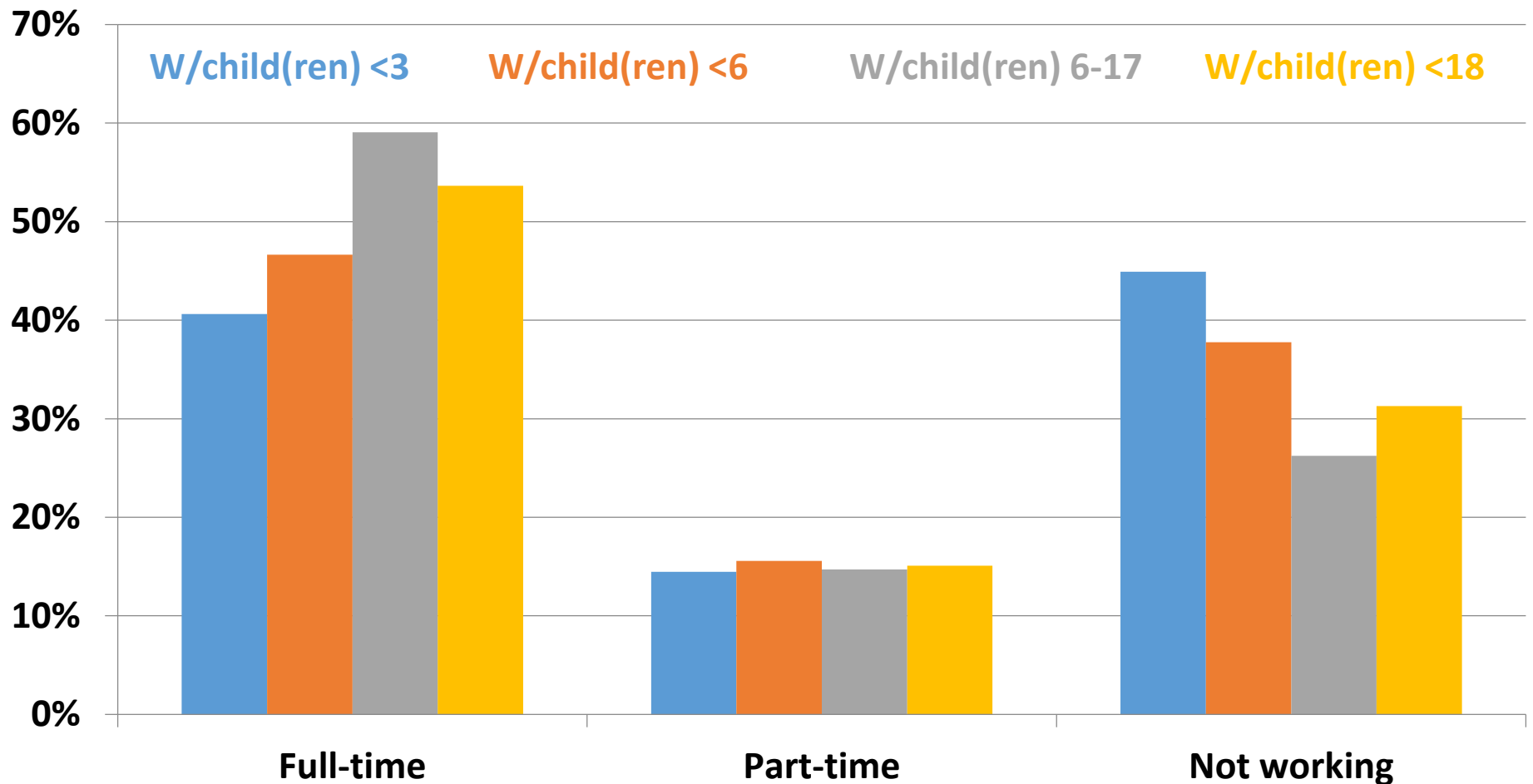
Horizontal and Vertical Equity



“Stay-at-Home” Mothers Left Out

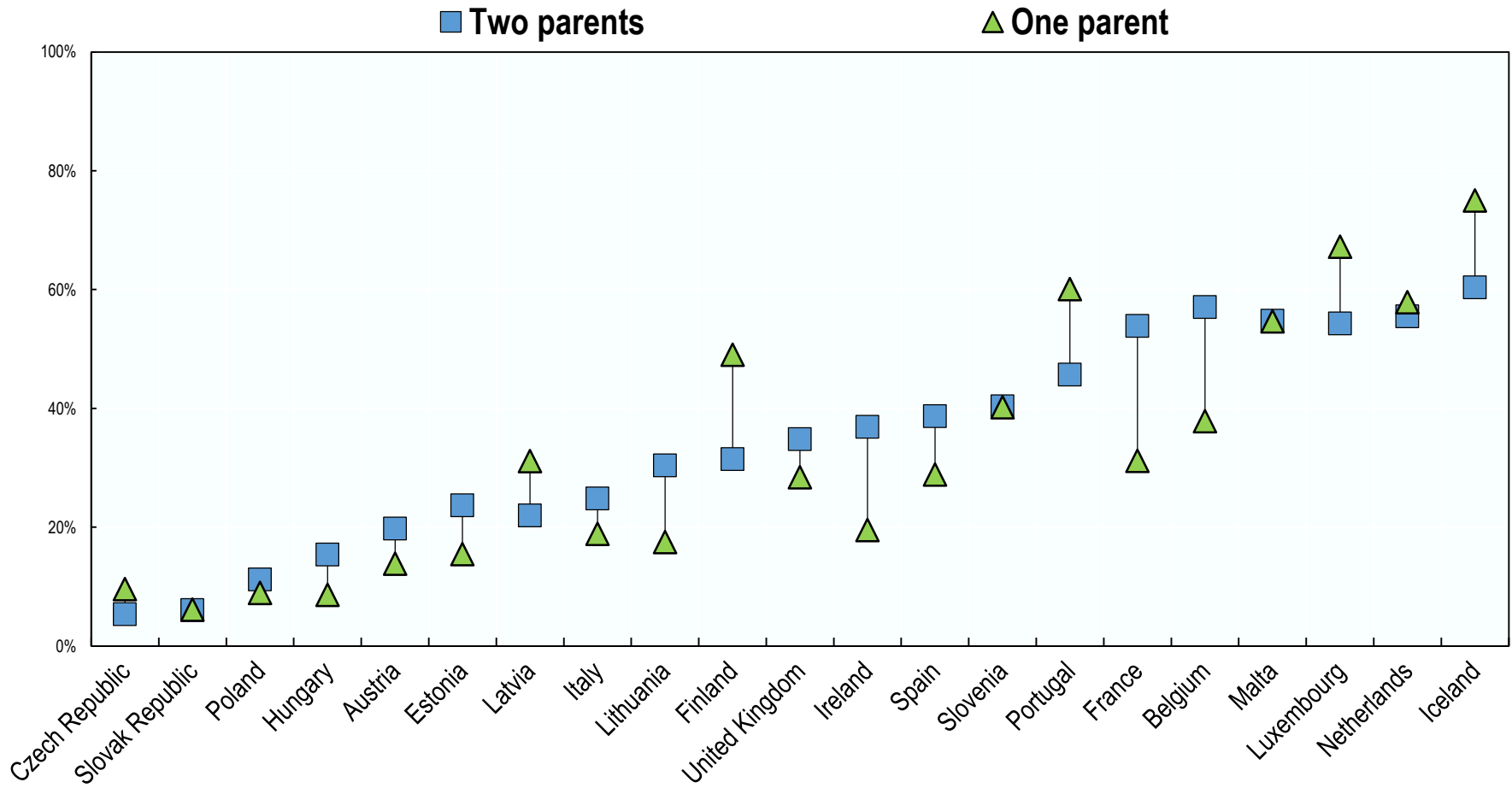
US Mothers, 2018

Percent of all mothers



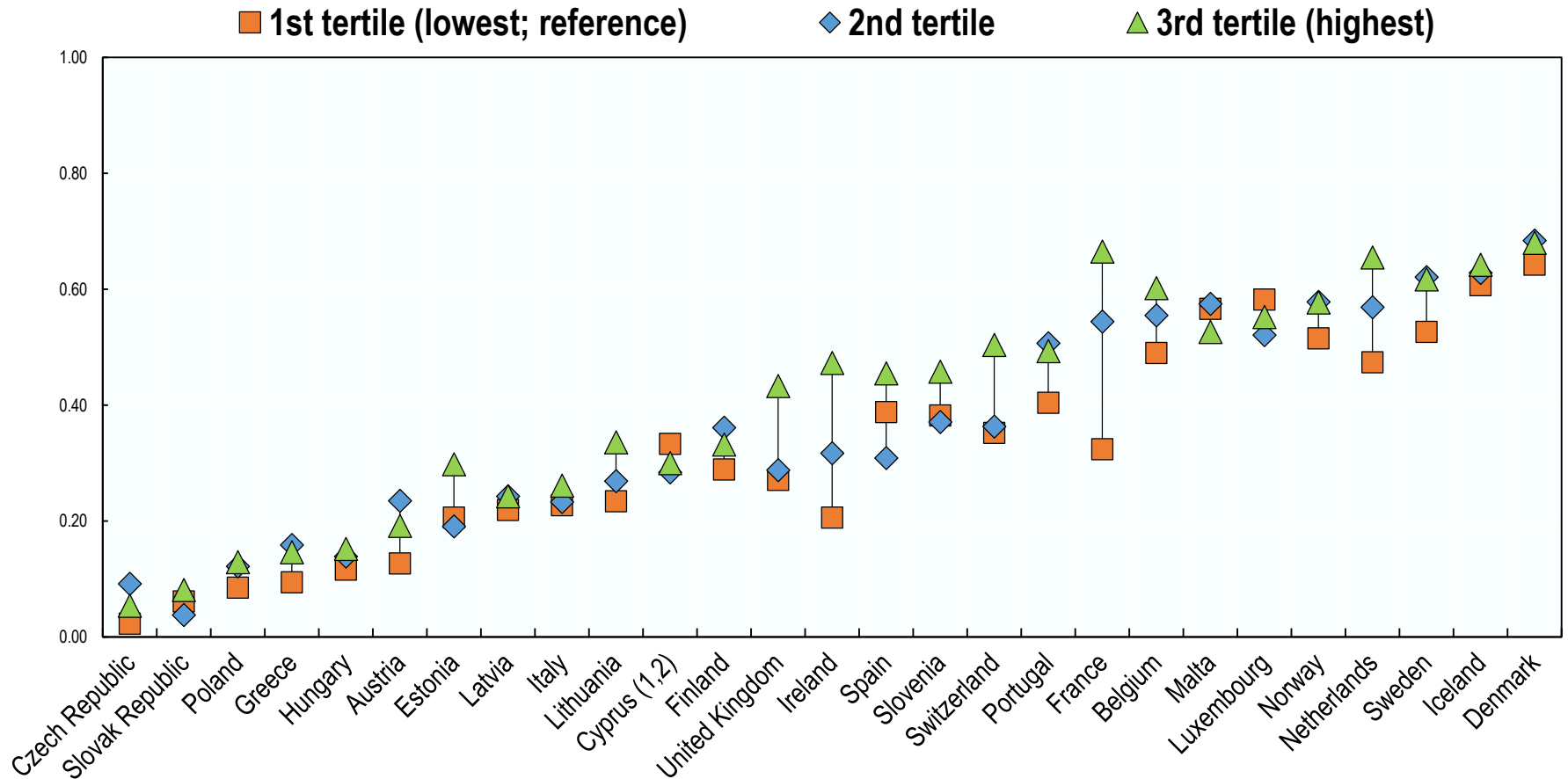
Two-Parent Households Receive More Child Care Subsidies

OECD children 0-2, 2014



Poorest Third of Families Receive Less Child Care Subsidies

OECD children 0-3, 2014



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“Quality” Matters



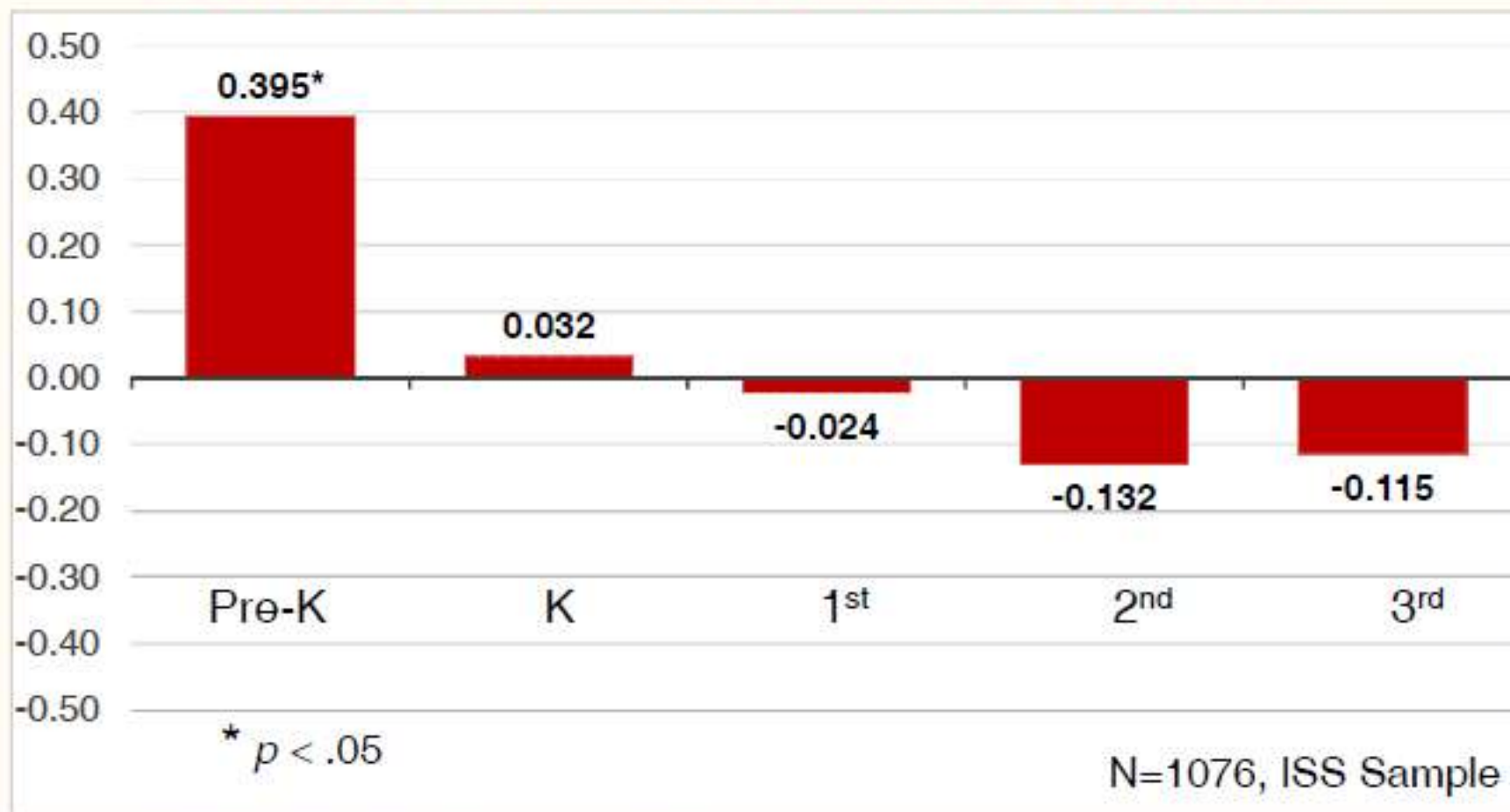
So Much More to Learn

Tennessee Voluntary Pre-K Program

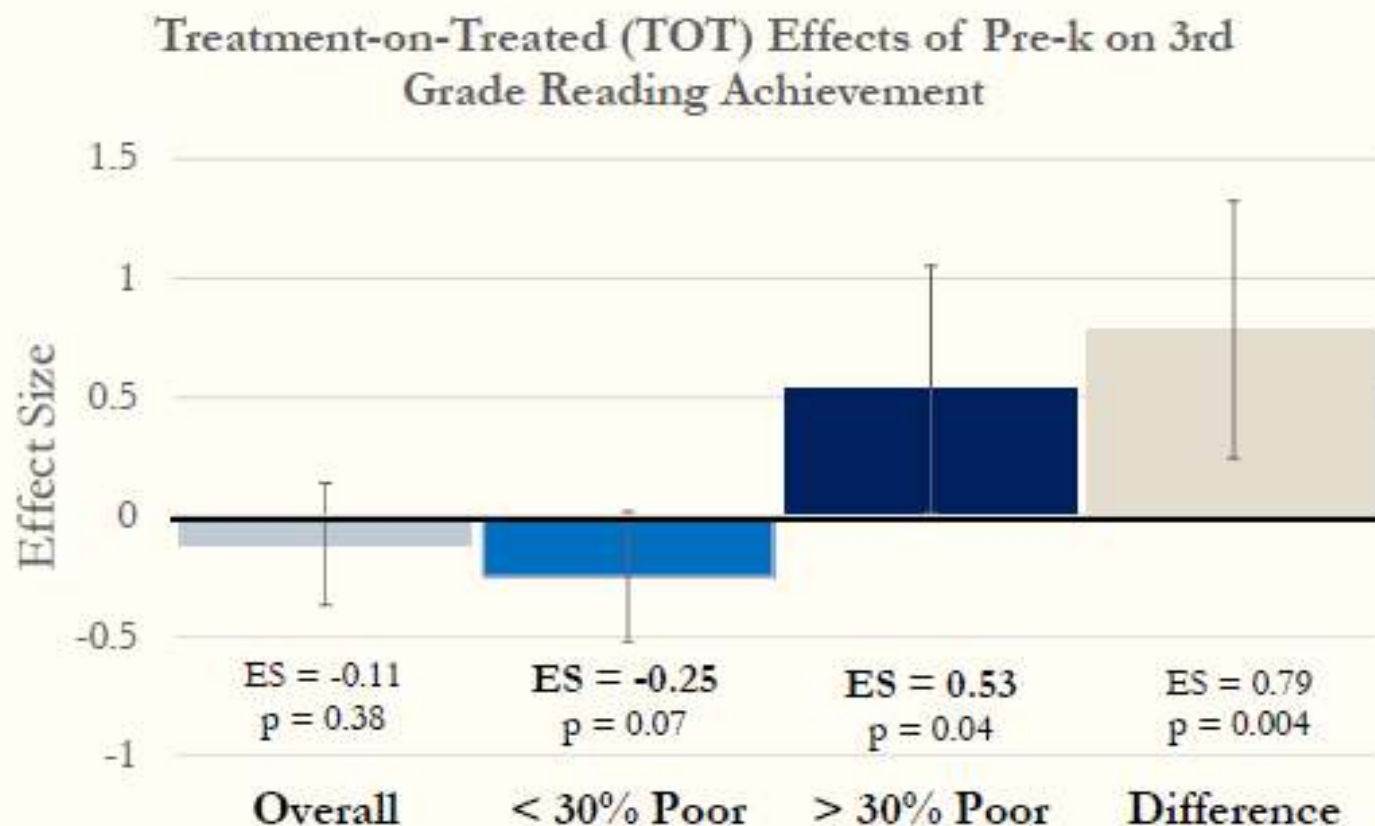
- **“Structurally typical state Pre-K program”**
- **Program**
 - 938 classrooms
 - 18,000+ students
 - \$87 million
 - Cost per child about \$4,800
- **Evaluation**
 - RCT based on oversubscription
 - 2,990 children: 1,852 program; 1,138 in control
 - Student outcomes through third grade



Effect Sizes for Woodcock Johnson Achievement Composite



Pre-K Effects on State Reading Test for Children in High vs Lower Poverty Neighborhoods



Pearman, F.A. (2018). The moderating effect of neighborhood disadvantage on preschool effectiveness: Evidence from the Tennessee Voluntary Prekindergarten Experiment. Under review.

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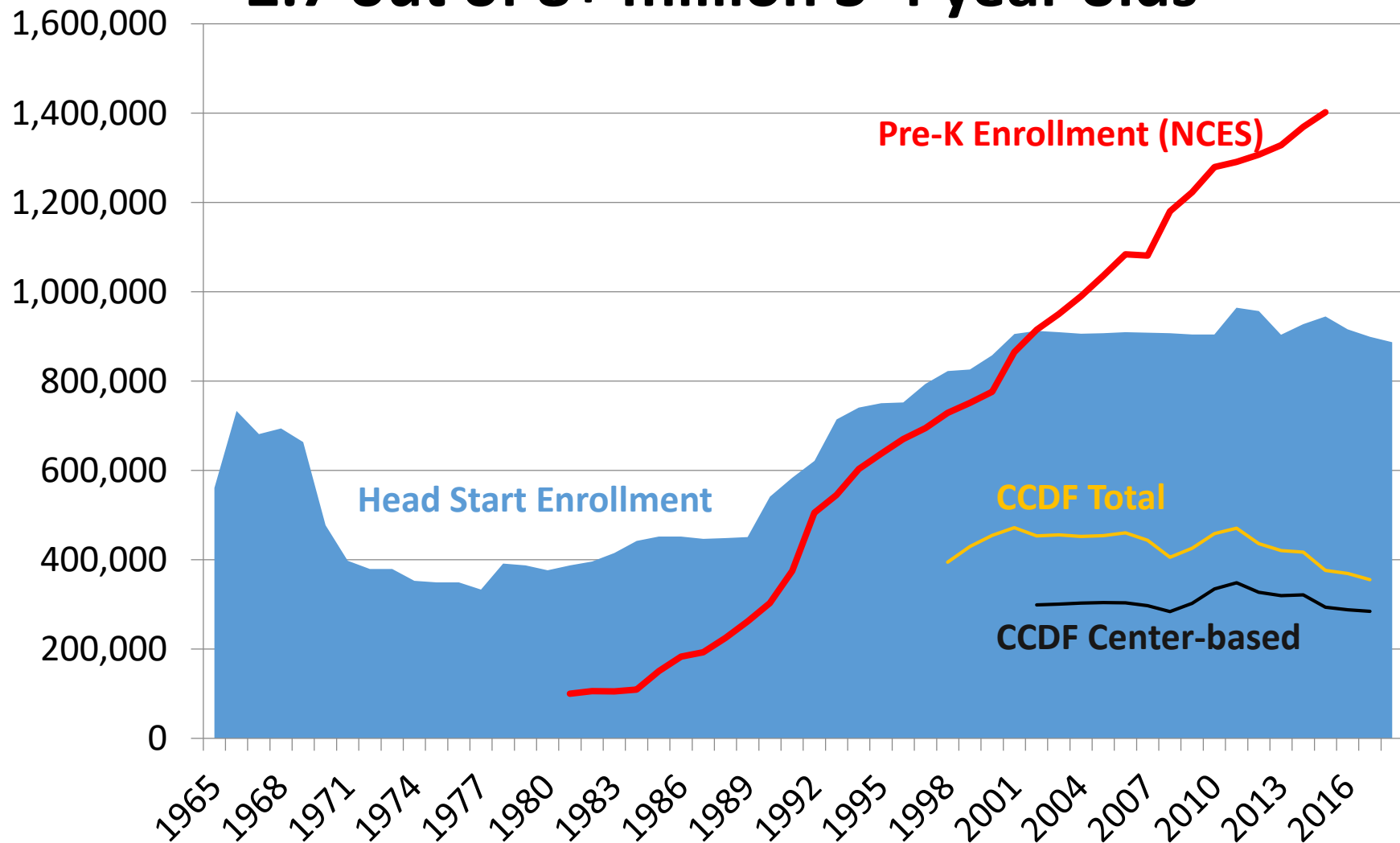
What Should Early Care Cost?

Head Start, Early Head Start, CCDF Child Care, &
Prekindergarten/Preschool
US, 2018

	Head Start		CCDF		Pre-K/ Pre-school
	Ages 3–5 (HS)	Ages 0–2 (EHS)	Ages 3–5		Ages 3–4
			Center	Family	
Average per child (regardless of hrs)					
Office of Head Start estimate	\$10,289	\$10,289	--	--	--
Office of Child Care estimate (2017)	--	--	\$5,580	\$5,028	--
Besharov/Myers estimate	\$13,321	\$22,719	\$11,502	\$10,260	--
NIEER estimate	--	--	--	--	\$5,175
Part-day and full-day sessions					
Besharov/Myers estimate (part-day)	\$7,963	--	--	--	--
Besharov/Myers estimate (full-day)	\$17,849	--	--	--	--
Hourly (across all durations)	\$12.77	\$14.50	\$5.94	\$5.41	n/a
Hourly (full-time)	\$11.94	\$14.44	\$5.00	\$4.47	\$8.35
Hourly (part-time)	\$14.92	\$18.05	\$6.32	\$5.62	n/a
Full-time, full-year (50 hours/week, 49 weeks/year)	\$29,262	\$35,364	\$12,232	\$10,947	\$20,470

Children in Head Start, Pre-K, and CCDF Child Care

2.7 out of 8+ million 3-4 year olds



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