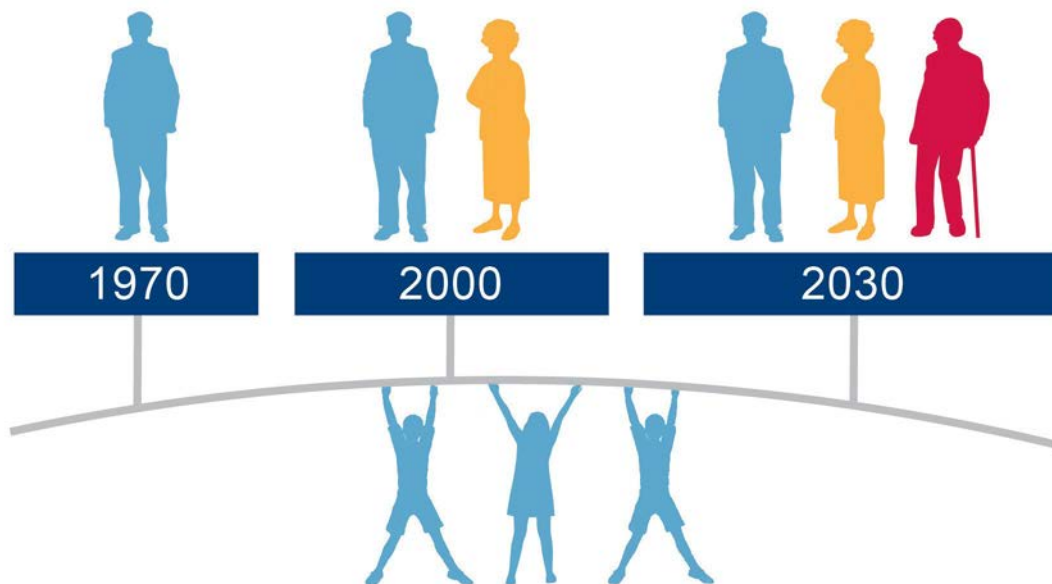


## Report

---

# The New Importance of Children in America



Prepared By

Dowell Myers

**USC Price**

Sol Price School of Public Policy  
*Population Dynamics Research Group*

# USC Price

Sol Price School of Public Policy  
*Population Dynamics Research Group*

Janet Li, Eduardo Mendoza and Gwyn Pauley contributed to this report.

**ABOUT DOWELL MYERS:** Dowell Myers is a demographer and professor in the Sol Price School of Public Policy at the University of Southern California, where he directs the Population Dynamics Research Group. Myers is the author of the award-winning 2007 book *Immigrants and Boomers* and numerous studies promoting the intergenerational perspective in planning and policy making.

**ABOUT THE USC SOL PRICE SCHOOL OF PUBLIC POLICY AND THE POPULATION DYNAMICS RESEARCH GROUP:** The USC Sol Price School of Public Policy ranks 4th overall among 272 schools of public affairs across the nation. For nearly 90 years, the School has defined excellence and innovation in research and education in the interrelated spheres of governance, urban development and health and social policy. The Population Dynamics Research Group in the Price School is a hub for the construction of detailed population analysis, visualization, and interpretive narrative. Children, aging, racial change and immigration are integrated with outcomes in housing, education, workforce, health and voting.



Support for this research was provided by the Lucile Packard Foundation for Children's Health and the Children's Hospital Association. The views presented here are those of the authors and not necessarily those of the Foundation, the Association, or their directors, officers or staff.

**ABOUT THE FOUNDATION:** The mission of the Lucile Packard Foundation for Children's Health is to elevate the priority of children's health, and to increase the quality and accessibility of children's health care through leadership and direct investment. More information is available at [www.lpfch.org](http://www.lpfch.org)

**ABOUT THE CHILDREN'S HOSPITAL ASSOCIATION:** The Children's Hospital Association (CHA) represents 220 children's hospitals, and is the voice of children's hospitals nationally. CHA advances child health through innovation in the quality, cost, and delivery of care with its member children's hospitals. More information is available at [www.childrenshospitals.org](http://www.childrenshospitals.org)

**Suggested Citation:** Myers, D. (2017). *The New Importance of Children in America*. Palo Alto, CA and Washington, DC: The Lucile Packard Foundation for Children's Health and Children's Hospital Association (CHA). The Foundation and CHA encourage dissemination of their publications available at [www.lpfch.org/publications](http://www.lpfch.org/publications) and [www.childrenshospitals.org](http://www.childrenshospitals.org).

The Foundation encourages dissemination of its publications. A complete list of publications is available at [www.lpfch.org/publications](http://www.lpfch.org/publications)

## CONTENTS

Executive Summary.....	iv
I. INTRODUCTION.....	1
II. A DIMINISHING NUMBER AND SHARE OF CHILDREN.....	6
A. Reshaping the Nation’s Life-Cycle in the 21 <sup>st</sup> Century .....	6
B. Downturn in Fertility Rates and Number of Children.....	8
C. Contributions of Immigrant Parents.....	10
D. Declining Proportion of Children in the Nation and Across the States ...	10
III. DECLINING WORKFORCE GROWTH FROM FEWER CHILDREN.....	14
IV. A SUMMARY INDICATOR OF THE GROWING IMPORTANCE OF CHILDREN.....	17
A. Logic of the Index Construction.....	18
B. Index Findings on Children’s Growing Importance.....	19
V. HUMAN ASSETS IN JEOPARDY .....	21
A. A Plague of Child Poverty .....	21
B. The Opportunity for an Important Return on Investment .....	22
C. Underfunding of Investment in Children.....	24
VI. A CALL FOR STRONGER NATIONWIDE INVESTMENTS IN CHILDREN .....	26
A. Expenditures for Public Education.....	27
B. Expenditures on Medicaid to Support Children’s Health .....	28
C. Children’s Shift toward States with Lower Funding Levels.....	29
VII. CONCLUSION .....	31
APPENDICES	
A. Children of Immigrant Parents in the Nation and States .....	34
B. Index of Children’s Societal Importance for the 50 States .....	36
C. State Spending on Children: More Details.....	38
D. The Long Duration of Returns to Childhood Investments, a review of the human capital literature, by Dr. Gwyn Pauley.....	42



## EXECUTIVE SUMMARY

Children, and how they are raised, educated and cared for, have assumed urgent, new importance in the 21<sup>st</sup> century, yet this fact is poorly recognized. The aging of the massive Baby Boom generation is well known and starting to reverberate within our country, and some are aware that birth rates are low. But what does their intersection mean for kids and for the country? Bluntly, the fact is that we have a shortage of children, and that will lead to a shortage of workers and taxpayers in the not too distant future. Meanwhile there are way too many older people—that's most of us—who will be relying on this undersized group of working age people when we reach our retirement years.

Having more children is not a viable solution. Fertility is depressed all across the developed world and no workable strategies have been found to increase baby-making when social and economic pressures work against it. In any event, any extra children added by 2020 won't come of age to help us much until after 2040 or 2050, but our crisis will be most intense long before that.

Our best hope is to cultivate the future abilities of the children already living with us so that society can accomplish more with fewer young people. This means greater investing in our existing children to maximize their capabilities and future earning power. We should start with the earliest ages possible, but also include those who are preteens and adolescents because they can help us a decade sooner. And because the least advantaged children have the most upside growth potential we especially need to target them so they can flourish to their fullest abilities. Helping every child to lead a well-nurtured, healthy and educated life is good for the child, but it also returns tremendous benefits to society and to the older voters and taxpayers. It is the right thing to do for children and it is good for us all.

Skeptics might ask, "If this is such an obvious, good thing, isn't it already reflected in policy?" Or they might question why they, rather than the children's parents, should assume responsibility, or why, since budgets are tight, should we spend more on children rather than something else. The point should be clear. We have entered a new era. We need to invest more in children now to strengthen their capacities because the number of children is growing so little and older people so much. Only by this empowerment can so many rely successfully on so few.

History is leaving us behind. Both America's assumptions about children and their futures and also our country's policies about children and family needs are inherited from the 20<sup>th</sup> century.

They are all calibrated to a time of high employment, liberal immigration policies and ample growth in the number of children relative to the number of retirees. The recent demographic shift in the U.S. has been so sudden, and our attention was so distracted by the Great Recession, that our perspectives and policies have not yet adjusted to the 21<sup>st</sup> century demographic reality. This report is intended as a wake-up call: this generation of children needs our full attention now.

Key findings in this study of the new era are the following:

Back in 1970 we had 21 million children ages 10 to 14 but only 7 million people in ages 65 to 69. Our pipeline of children, representing our stock of future workers, was triple the size of the recent retirees. By 2030 we will still have 21 million children in ages 10 to 14 but also 21 million in ages 65-69. The former ratio of three children to one senior will have disappeared.

Advances in life expectancy mean that once people cross age 65 they are likely to live many years longer, creating an ever growing numbers of seniors. The total of all these seniors compared to the total of all the cohorts who are ages 25 to 64, the 40-year span that marks prime working age, is changing drastically and many more seniors must be supported by the economic productivity of those of working age. Whereas in 1970 there were 23 seniors for every 100 people of working age, by 2030 there are expected to be 42 seniors instead of 23, and this trend is going to continue to rise. The ratio of seniors to those of working age will be twice as great as in the 20<sup>th</sup> century (see Exhibit 1 in the main report).

In the next 10-20 years, today's children will grow into adulthood but their undersized numbers will struggle to support the U.S. economy as workers, consumers, and taxpayers, as well as providing crucial support to the large number of seniors. This scenario is assured for coming decades in large part because fertility rates have been falling among all race-ethnic groups; no one is having very many children.<sup>1</sup>

The flow of immigrants to the United States has eased this problem somewhat, but even with the help of immigrant parents, our total fertility rate remains low. Today, among children under age 6, fully one-quarter (25.2 percent) have immigrant parents. Without these babies, the total number of children born in the U.S. would have been depressed from the 2015 total of 3.98 million to 2.98 million, a reduction of one million children each birth year from the already

---

<sup>1</sup> The highest total fertility rate in 2014 was among Hispanic mothers, Latinas, averaging 2.13 babies per woman, which is just at the replacement level. Black women averaged 1.87 babies per woman, white women 1.76 babies, and Asian/Pacific Islanders 1.72. The total for the U.S. in 2014 was 1.86 babies per woman but preliminary data for 2015 shows that falling to 1.84. The U.S. is not alone in this challenge of depressed fertility, and birth rates are even lower in most of Europe or Japan and Korea.

diminished number. Such a hypothetical reduction would be a severe economic blow in the next two decades when labor force growth is driven to historic lows by the massive retirements of the baby boom generation. As it is, the grown children from these immigrant parents are expected to account for roughly 40 percent of the working age growth from 2010 to 2020 and three-fourths of the growth projected from 2020 to 2030 (see Exhibit 8 in the report).

The relative shortage of children is widespread across the nation. Nationally, the number of children under age 18 increased by only 1.9 percent from 2000 to 2015, while the rest of the population grew by 18.5 percent, *nine times faster*. A similar imbalance occurred in most states (see Exhibit 6). As a share of each state's population, the presence of school-age children, 5-14 years, has declined from 14.6 to 12.8 percent of the U.S. population, with somewhat greater reductions in presence experienced in Northeastern and Midwestern states (see Exhibit 6).

Looking forward, based on the anticipated growth of the senior population, the societal importance of children in every state begins to soar for children coming of age after 2015 (see Exhibit 12). Compared to the "normal" societal importance (represented by those born in 1975 and coming of age in 2000), children take on more than twice their previous importance as a social and economic resource in five states of the Northeast, four in the South, six in the Midwest, and five in the West. Only three states have less than a 50 percent increase in the societal importance of children—Alaska, Nevada, and Utah.

How well are we caring for and preparing our children who have assumed so much greater importance than was the case in the 20<sup>th</sup> century? Not well. Over 22 percent of children under age 12 live in poverty compared to a poverty rate of less than 11 percent for each age group above age 45 (9 percent in poverty above age 65). The incidence of child poverty has increased markedly since 2000. Even after recovery from the Great Recession the poverty rate in 2015 is 4.8 percentage points higher than it was in 2000 (see Exhibit 13). Child poverty increased in all but two states in the first 15 years of this century. It is substantially higher in the South than elsewhere in the U.S. The social consequences of poverty are especially damaging to the developing brains and future capabilities of young children, and thus bode badly for the contributions of our future workforce.

High quality education is key to children's later achievement, yet spending per pupil in K-12 public education varies greatly across the country (see Exhibit 15). In general, the Northeast states spend substantially more on their children.

Health and health care during childhood not only affects children's ability to benefit from educational opportunities, but is predictive of their health as adults. Relative to health care for

adults, health care for children is inexpensive. We don't spend much money on children's health. Nearly half of U.S. children receive at least part of their childhood health care through the Medicaid program. Spending on health care is less widely divergent across the states than education spending because of the incentives provided by strong federal subsidies. Nonetheless, spending is generally higher across the Northeastern states and lower in most of the West and half the South (see Exhibit 16).

Income support, and education and health care spending strongly reflect state policies. Are states investing in these services commensurate with the proportion of children residing within them? Unfortunately not. A growing number of children are residing in states with lower levels of resources devoted to them. The states that are gaining a larger share of the nation's children provide **lower** levels of both health and education spending. Texas is especially important because it is capturing so much of the nation's growth in children; yet it offers among the lowest levels of K-12 spending per pupil. Fortunately, Texas rises closer to average on its Medicaid spending.

These disparities among states' support for their children are not just a local problem but also have national implications. States are not isolated from one another in the consequences of how they care for the nation's children. Forty percent of adults who are U.S.-born currently reside in a different state than where they were born and received health care and education. So the levels of skills and health of many working Arizonans, Coloradans or North Carolinians, as examples, were determined by other states where they spent at least part or all of their childhood. This transfer of human capital is greatest for those with potentially the most to contribute. Among adults whose education stopped in high school, only 32.8 percent have left their birth state. However, among college graduates the dispersion across state lines increased to 46.6 percent, and among those with advanced training, 54.0 percent. As a result, the workforce in other states benefits from and depends on the upbringing and care received in children's home states. The investments of states are linked by migration among them.

In the era we have now entered, the doubled importance of children should be recognized and factored into civic goals and public policy. Our social and economic progress and leadership require that we invest more, and more uniformly, in our children and their families. Assuring that children, our future, develop their capabilities to the fullest extent possible surely must be a nationwide priority.



## I. INTRODUCTION

Children are often depicted/acknowledged/looked to as the future of our society. Our hopes for ourselves, our families, and our communities are wrapped up in the promises of the future generation. The United Nations International Children's Emergency Fund (UNICEF) has proposed three major reasons for societies to invest in children: Ethically, it is necessary for achieving human rights; socially, it is important for achieving social cohesion; and economically, it is vital for achieving the gains in productivity necessary for growing an economy and sustaining a high standard of living.<sup>2</sup>

Major new trends evident in the United States make investing in children more important for our future than ever before. The ethical and social reasons for supporting children remain constant. But an urgent new case should be recognized for the economic benefits of investing in children, one rooted in the major demographic changes that threaten the well-being of *older* Americans and that strain the entire U.S. economy. Certainly, investment in children is important to children themselves, and to all Americans, but it is especially vital for the growing numbers of citizens who will reach retirement age in coming years.

Budget outlooks in Washington, D.C., are highly uncertain in spring of 2017, but there is reasonable knowledge about interest on the accumulated federal debt and on Social Security and Medicare. Together with the current budget allocation for defense spending, those basic factors account for 67.3 percent of all federal spending. The Urban Institute (2016) estimates spending on children's programs amounts to 9.9 percent of federal outlays, leaving 22.9 percent for all remaining programs (e.g. transportation, infrastructure, housing, parks, environment, and welfare programs, other than children's spending).<sup>3</sup> The children's share is expected to grow only very slowly, collecting 2 cents of every additional dollar spent by the federal government, so that the children's share in 2026 might fall to only 7.7 percent. Of course, If higher defense and infrastructure spending are adopted in future budgets, the children's share could be squeezed below its already-low, expected level.<sup>4</sup>

---

<sup>2</sup> UNICEF. (2005). Investing in Children and Adolescents: Arguments and Approaches for Advocacy. Retrieved from [https://www.unicef.org/lac/Investing\\_in\\_Children\\_and\\_Adolescents\(5\).pdf](https://www.unicef.org/lac/Investing_in_Children_and_Adolescents(5).pdf). See [https://www.unicef.org/socialpolicy/index\\_53294.html](https://www.unicef.org/socialpolicy/index_53294.html) for more.

<sup>3</sup> CBO 2017: figure 1-5.

<sup>4</sup> Congressional Budget Office. Budget and Economic Data. 10-Year Budget Projections. Jan 2017. Retrieved from <https://www.cbo.gov/sites/default/files/recurringdata/51118-2017-01-budgetprojections.xlsx>

As for children's healthcare, currently 85 percent of federal spending for that purpose is through Medicaid. Proposed cuts of \$880 billion in federal outlays to Medicaid over the coming decade, as part of the American Health Care Act debated, would uninsure 24 million Americans, including many children.<sup>5</sup> What was already a highly competitive budget environment has been made more so by the extensive initiatives proposed by the Trump administration. To this point none of those initiatives has recognized and addressed the major new importance of children that policy certainly will need to accommodate.

The nation's children face a distinct risk today, according to Mark Wietecha and Christina Bethell (2016): "Medicaid currently serves as the health care program for over 30 million children, and is the nation's single largest health sponsor of children in the nation. The Children's Health Insurance Program, set to expire in 2017 and also at risk, accounts for several million more children. Medicaid's Maintenance of Effort requirement for children's eligibility is set to expire in 2019. These key elements of the child health safety net are at risk at a time when budget pressures are mounting."

Budget priorities for spending on children's programs depend on an unstated "social contract" that our society has with the nation's children and their families. It is worth considering what comprises a social contract in its core elements, because these can be changed at any time. In its most general formulation, a social contract consists of four components: (a) the underlying shared social understandings (b) that structure cooperation (c) within a society of self-interested individuals (d) who possess unequal resources.<sup>6</sup> In a democracy, the self-interested voters are crucial actors, and they make decisions based on the social understandings they share with their peers. Those understandings are heavily impacted by changing demographics.

What has changed in the 21<sup>st</sup> century is that our rapidly aging society will combine with a languishing number of children to place an unprecedented premium on the success of the children we are raising now. Nurturing their full capabilities is crucial to the self-interest of both young and old.

The connection between today's investments and tomorrow's society is that our children are destined to be the future workers and consumers who will make the economy thrive. They also will be the major taxpayers supporting the old. Children may not look like taxpayers when they

---

<sup>5</sup> Congressional Budget Office. (2017, Mar 13). Cost Estimate: American Health Care Act. Budget Reconciliation Recommendations of the House Committees on Ways and Means and Energy and Commerce, March 9, 2017. Retrieved from <https://www.cbo.gov/system/files/115th-congress-2017-2018/costestimate/americanhealthcareact.pdf>

<sup>6</sup> This formulation of the social contract, proposed by Beth Rubin (1996), was further developed and extended to 21st century demographics by Dowell Myers (2007) in immigrants and Boomers: Forging a New Social Contract for the Future of America (New York: Russell Sage, 2007).

are young and dependent but it is certain that almost all will grow to be adults and, if we assure their health and education now, we can better count on them being healthy, productive and contributing members of society.

Among the stages of life, childhood is a relatively short phase of development, but it is a crucial period for laying the foundation that will have lasting effects on adult behaviors and capabilities. Despite this knowledge, we are failing to capitalize on the opportunities childhood offers, and the results could be perilous for our position in the world. Compared to other developed countries, the United States lags far behind in our support of children and families. Nearly a third of U.S. children live in households with an income below 60 percent of the national median income,<sup>7</sup> which UNICEF uses to rank the U.S. 6th *worst* out of 41 developed countries for childhood poverty outcomes.<sup>8</sup> Not only is it unfair to neglect so many children, but also, those coming from such disadvantaged backgrounds, without supplementary assistance, will be less able to grow into productive roles in future years. At present, barely 10% of the federal budget goes to children, through tax credits, the Supplemental Nutrition Assistance Program (SNAP) and other child nutrition programs, health, income security, and education.<sup>9</sup>

Not only are we not adequately supporting children's health and development, today we face an impending shortage in the numbers of children our country requires to grow into productive adults. The new generation is undersized because of declining fertility rates: women of all racial groups are having fewer children. Meanwhile, there is substantial growth in the population of those above age 55, due to aging of the massive baby boomer generation (born between 1946 and 1964). A single chart of the soaring ratio of seniors to the working-age population summarizes how suddenly and severely the United States is being hit by this imbalanced age structure (Exhibit 1). Following many decades of stability, an abrupt increase has begun in the ratio of seniors to economic supporters of prime working age (25 to 64). Between 2000 and 2015, the senior ratio began to climb from 23.8 seniors per 100 working age to 28.3, and by 2030, the senior ratio will leap to 41.6, far beyond any previously seen ratio in the United States. We know these projections with certainty because all of the players already

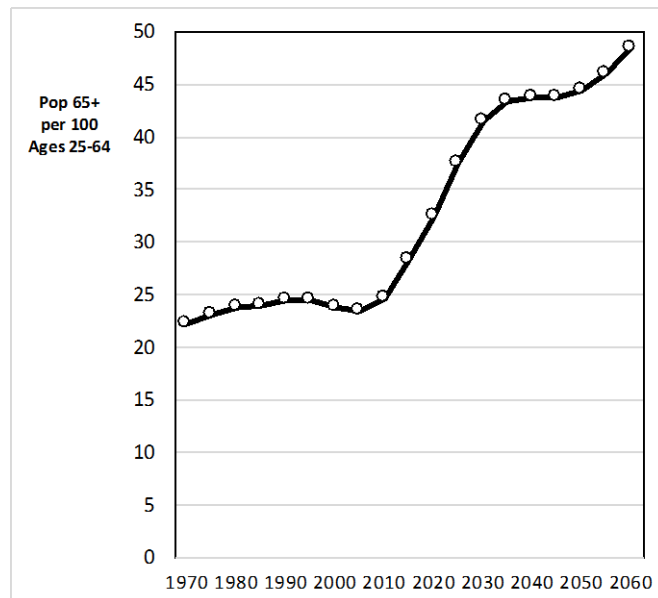
---

<sup>7</sup> (2014). Children of the Recession: The Impact of the Economic Crisis on Child Well-Being in Rich countries. UNICEF. Retrieved from <https://www.unicef-irc.org/publications/pdf/rc12-eng-web.pdf>

<sup>8</sup> Ingraham, C. (2014). Child Poverty in the U.S. Is Among the Worst in the Developed World. The Washington Post. Retrieved from <https://www.washingtonpost.com/news/wonk/wp/2014/10/29/child-poverty-in-the-u-s-is-among-the-worst-in-the-developed-world/>

<sup>9</sup> Edelstein, S. (2016). Kids' Share 2016: Federal Expenditures on Children Through 2015 and Future Projections. Urban Institute. Retrieved from <http://www.urban.org/sites/default/files/alfresco/publication-pdfs/2000934-Kids-Share-2016-Federal-Expenditures-on-Children-through-2015-and-Future-Projections.pdf>

**Exhibit 1.** A Soaring Senior Ratio: Number of People Age 65 and Older per 100 People of Full Working Age (25-64), 1970 to 2060



*Source:* Author calculation from population estimates and projections by the U.S. Census Bureau

can be estimated under conditions of continued immigration.<sup>10</sup>

Since aging cannot be stopped, is there any way in which we can better prepare for the future?

Our children hold the key. Helping them grow into healthy, productive adults able to meet our social expectations is the solution, and the implications for children could not be more clear. When a child of age 10 in 2015 arrives at age 25 in 2030, he or she will step into economic and social roles strained by a much greater number of older Americans—in fact, the burden the figure shows is nearly twice as great as that faced by adult children before 2000. This imbalanced age structure is absolutely unprecedented in the United States (although it also is occurring in Japan, Korea and Europe) and it has grave implications for seniors. Older Americans will be relying on fewer working taxpayers to support their Social Security and Medicare: where we used to have 5 contributors for each person on Social Security, we soon may have only 2.5. Barring large increases in immigration, fewer children growing up also means there will be relatively fewer workers and consumers to drive the economy, provide needed services, or even to buy seniors’ homes when they choose to downsize or draw cash from these assets for their retirement.

---

<sup>10</sup> Projections in the chart include a continued rate of immigration, principally into working ages, that resembles the period since 2000. This rise of the senior ratio would be more severe in the absence of any immigration, but even with the current rate of roughly one million new immigrants per year the increase in the ratio is slowed by only about one-quarter. Dowell Myers, “The Contribution of Immigration to Reducing Aging in America: Application of the Senior Ratio to Census Projections,” Public Policy and Aging Report vol. 22 (Spring 2012): 1-7.

The imbalance in numbers between young workers and the elderly and their transposition in dependency will require today's children to become especially strong contributors in the future. What can we do today to better address the future imbalance of dependency and support? What is the fair thing to do? Evidence in this report will show that much greater attention and priority must be given to children's health and education needs. The scientific evidence shows that the greatest personal and societal benefits accrue from helping children from the earliest age. (A detailed review is provided in Appendix C.) The evidence also shows that the greatest gains will come from helping children of less-advantaged backgrounds counter their early deprivation by enhancing their subsequent health and experiences. Although current trends suggest that in the foreseeable future we cannot depend on expanding the number of children in our society, we can fortify the skills of every child being raised in America so that the nation can accomplish more with fewer.

In this report we explore the numbers behind the new generational imperative of promoting the well-being and success of all the nation's children. Analyses that follow will look at different age groups of children: all children together under age 18; children under 5, the newest children, the infants, toddlers and preschoolers of America; or school-age children ages 5 to 14. However defined, these children are the human resources of America that comprise the foundation for a better future to be shared by all.

First addressed in the report is the extraordinary reshaping of the life-cycle numbers in the 21<sup>st</sup> century compared to what we are used to from the 20<sup>th</sup> century. Against this background we then delve into the declining presence of children in the nation as a whole, showing their new relative scarcity. This problem is nationwide, as demonstrated by a comparison of the 50 states, although the problem is deeper some places than others. Following that we will show how the *decrease* of the younger generation directly translates to a relative *increase* in economic or societal importance. The *Index of Children's Societal Importance* concisely measures how the relative scarcity of children is making each child ever more crucial to the future social and economic success of the nation.

The growing burden of expectations for each child creates a new urgency for action to help all children fulfill their greatest potential. The report explores existing disparities that prevent children from achieving their full potential. These disparities are of several types, some from limitations of family resources and others from inequities of government program funding for health and education. Closing those gaps will bring us closer to helping all children fulfill their innate potential in life. Maximizing that potential will be of benefit to young and old alike. The economic evidence of returns on investment is very consistent about the positive rewards our society gains from helping children from the earliest age.

All of these considerations appear in a new light once we realize the impact of a diminishing

number of children, the opposite of the burgeoning growth of earlier decades. What was once taken for granted no longer can be so neglected.

## II. A DIMINISHING NUMBER AND SHARE OF CHILDREN

The priority children receive in U.S. public policy may have been slipping downward in concert with their diminishing prevalence in number. Yet, for the future good of the nation, this smaller number, paradoxically, requires *greater* priority, not less. Profound social change is underway but the nation's children's policies have yet to catch up. To understand this new importance of children, it is important to understand how dramatically the demographics of the nation have shifted in this new 21st century compared to the last. We also should examine the birth rates that produce so few children. Finally, it is informative to compare the 50 states to see how widespread is the declining prevalence of children.

### A. Reshaping the Nation's Life-Cycle in the 21<sup>st</sup> Century

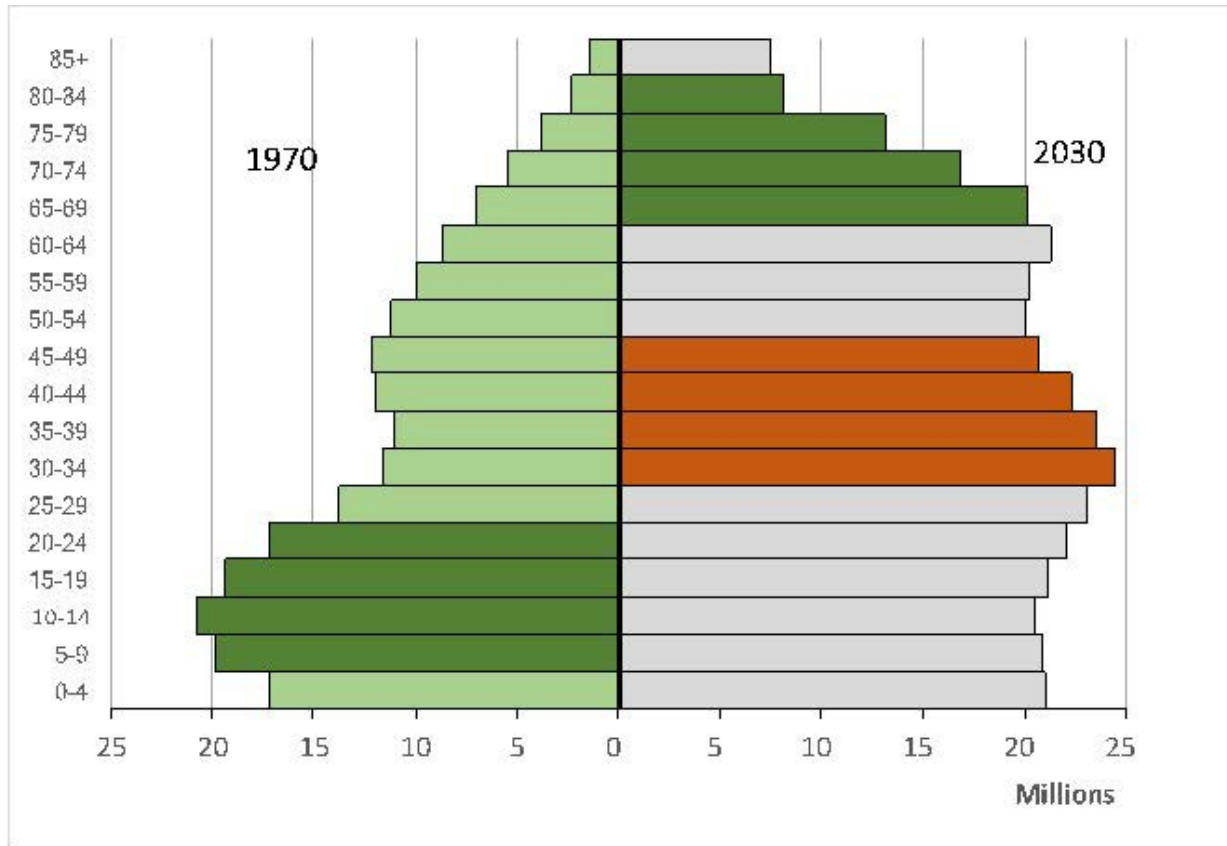
Recent historical perspective is needed if we are to appreciate the changing role of children in our national life-cycle comprised of more than 300 million residents. The changes are so great that a new national agenda for children is deserved for the 21<sup>st</sup> century.

The demographic changes in America between the 20<sup>th</sup> and 21<sup>st</sup> centuries could not be more extreme. The classic population age "pyramid" is built on a base of high fertility, with a larger generation born each year than those in the adult ages and a very small number of elderly at the pinnacle of the pyramid. This bottom-heavy shape described the United States in the wake of the baby boom era (1945 to 1964), when the nation was dominated by children and parents. Yet the pattern of age distribution today could not be more different from that of the mid-20<sup>th</sup> century.

Exhibit 2 compares the two population age profiles side-by-side, with the 1970 totals (in millions) by age on the left side and 2030 on the right. In 1970 there were relatively few people over age 65, compared to the more than 10 million in each 5-year age group in the age range of the 40s and 50s. Even more pronounced is the more than 20 million people in each age group of childhood. The post-war baby boom finally ended in 1964, and that is reflected in the contraction of number of children under age 5 in 1970.

In contrast, in 2030, Census Bureau projections anticipate roughly 20 million people will be found in every age group up to about 70. This is the steady-state, balanced age distribution expected under sustained low fertility conditions. And above age 65 there are many more elderly in 2030 than in earlier years. That is why the ratio of seniors to working age, shown previously in Exhibit 1, is expected to double what was its level in 1970 and even very recently.

**Exhibit 2.** Comparison of Age Distribution in 1970 (left) and 2030 (right), showing the millions of people in each 5-year age group, and demarcating the Baby Boom generation in dark green and Millennials in red



Source: U.S. Census Bureau, 1970 census and projections prepared in 2014 for 2030

Consider the changes expected in the relative numbers of children. Back in 1970 we had 21 million children ages 10 to 14 but only 7 million who were ages 65 to 69. Our pipeline of children was triple the size of the recent retirees. By 2030 we will still have 21 million children in ages 10 to 14 but now also 21 million in ages 65 to 69. This eliminates the size advantage that numerous children (and future workers) held relative to new retirees.

Once people cross age 65 they live many years longer, and the numbers of seniors really add up. We should compare the total of all these seniors to the total of all the cohorts between ages 25 and 64, the 40-year span that marks prime working age. How many seniors are being supported in the economy by the number who are working age? Whereas in 1970 there were 23 seniors for every 100 people who are working age, by 2030 there are expected to be 42 seniors, rising still higher in later years and making the weight of the seniors carried by the working age twice as great as in earlier years (Exhibit 1).

The number of children appears fairly constant between 1970 and 2030, and yet their role is greatly magnified by their smaller numbers relative to the rest. Age-wise, the nation is growing ever more top-heavy in its emphasis on seniors, who will require many more services and support from Social Security and Medicare. But the limited growth in the proportion of children in the population portends many fewer, and perhaps inadequate, numbers to grow into adult roles of workers, taxpayers, and consumers upon whom we depend to drive the economy. The nation's leadership in government, business and the philanthropic community must consider what can be done to better help such a meager number of children to grow into the key supporting roles that the economy and older Americans will require.

## **B. Downturn in Fertility Rates and Number of Children**

The number of children born each year in the first 15 years of the 21<sup>st</sup> century has remained fairly steady at 4.0 million per year, and yet that is much less than expected from the size of the parent-aged population. Lowered lifetime fertility rates for women are stunting the base of the population pyramid from broadening at the bottom. The replacement level of fertility to sustain a constant population size over the long-run is estimated to be 2.1 babies per woman over her lifetime, a number just sufficient to replace a woman and partner. The United States has hovered near this level or slightly below since the mid-1970s.

The average fertility rate of all American women, shown by the heavy dashed line in Exhibit 4, has fluctuated in a small range, between 1.85 and 2.15 babies per woman, generally falling slightly below the replacement level of 2.1 births per woman. By comparison, the total fertility rate is much lower in most of the developed world, an average of 1.6 across all of Europe, 1.2 in South Korea, 1.5 in Japan, 1.6 in China, 1.6 in Canada, and 1.8 in Australia.<sup>11</sup> In the United States, during the economic boom of the early 2000s these fertility rates bulged slightly upward; however, after the onset of the Great Recession, fertility rates plunged downward.

Fertility rates are most often recorded by the race and ethnicity of the mother. The lifetime fertility rates in recent history were higher for Hispanics and African-Americans than for whites and Asians, and yet they were not as exceptionally high as sometimes believed (Exhibit 3). Even with the higher fertility rates of some groups, the national average fertility still remained below the replacement level. After 2007, fertility rates plunged for women of all groups. The steepest declines after 2007 are witnessed among Hispanics, falling from 2.84 to 2.13 children per woman. Among whites the decline was from 1.91 to 1.76, markedly below the replacement

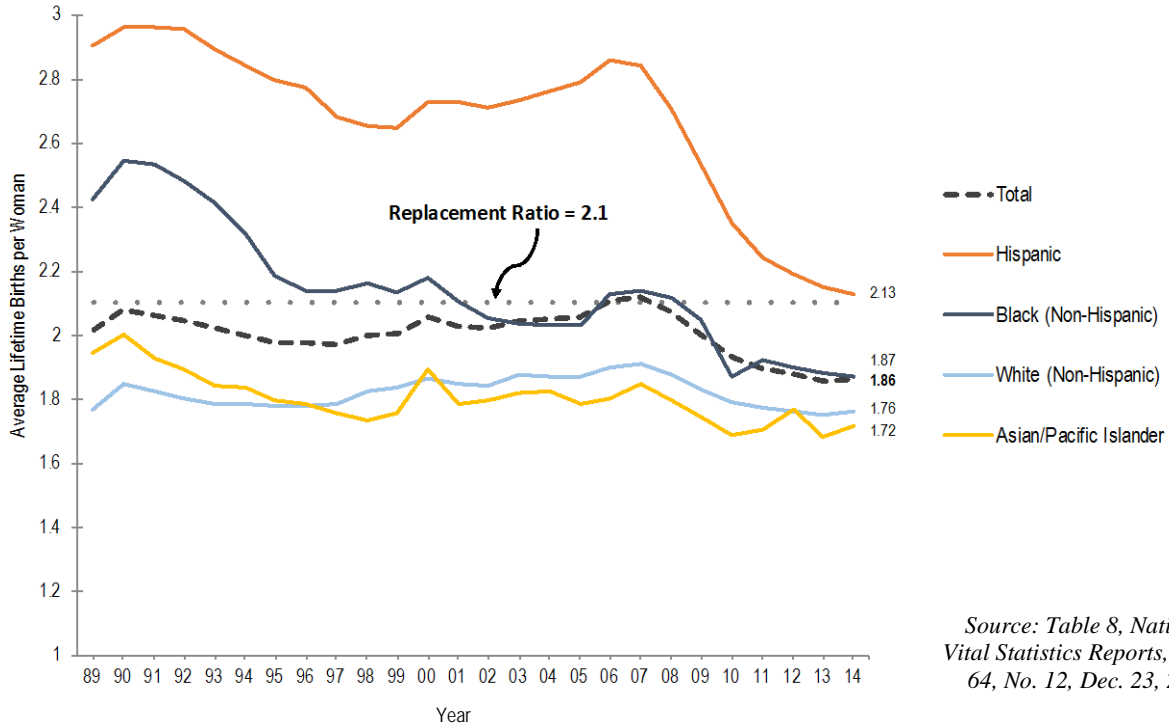
---

<sup>11</sup> Population Reference Bureau, 2016 World Population Data Sheet.



level. The African-American fertility rate also declined, from 2.14 to 1.88, while that of Asian-Americans declined from 1.85 to 1.72.

**Exhibit 3.** Total U.S. Fertility Rates by Race/Ethnicity of Mother, 1989 to 2014



Source: Table 8, National Vital Statistics Reports, Vol. 64, No. 12, Dec. 23, 2015

Following the recovery from the recession, fertility has yet to rebound upward. It appears that the early 21<sup>st</sup> century is being marked by sustained low fertility that will persist below the replacement level. There are many causes for this, some that are deeply structural and not easily altered.<sup>12</sup> But for the present, the overriding implication is that every child who has been born and is being raised in America is more important than ever before to the future of the nation. The contribution to society of every child is more precious because of their relative scarcity. This is so very different from earlier decades when the nation had an abundance of children and young workers.

<sup>12</sup> Structural change in the economy places even greater weight on women's employment, and young women's educational attainment has leaped above men's since 2000. Marriage rates have greatly slowed, and shortages of housing, rising costs and increasing problems with affordability also burden potential families.

### **C. Contributions of Immigrant Parents**

Immigration to the United States is primarily driven by labor demand, so it is a source of labor supply, but immigrants also contribute children, helping to fill part of our shortage. Very few children living in the United States are foreign-born themselves. Even among children who have immigrant parents, less than 5 percent are immigrants themselves. Instead, they are U.S.-born and contribute to the ranks of children growing up in America from birth.

These children of immigrants appear in the fertility data just discussed, and still the birth rate is very low. It is noteworthy that one-quarter of all children living in America have one or more immigrant parents, 25.2 percent of those under age 6 and 25.7 percent of those ages 6 to 14 (Appendix A). These shares vary greatly across the nation, due to uneven presence of immigrant parents in the states. Fully 46 percent of California's youngest residents, and 39 percent in New Jersey, have immigrant parents. In other parts of the nation, this share is far smaller.

Without the immigrant parents, the total number of children born in the U.S. would have been depressed from the 2015 total of 3.98 million to 2.98 million, *a loss of one million children from an already diminished number*. Such a hypothetical reduction in the number of children would be a severe economic blow in the next two decades when labor force growth is driven to historic lows by the massive retirements by the baby boom generation.

### **D. Declining Proportion of Children in the Nation and Across the States**

As a result of low fertility rates, and despite the influx of immigrant parents, the share of the total population comprised by children of all ages has been declining. Whereas the total population in the United States grew by 14.2 percent from 2000 to 2015, the total number of children under age 18 increased by only 1.9 percent (Exhibit 4). At the same time, all people 18 and older ("adults") increased by 18.5 percent, nine times greater than the growth in children. As a consequence, children's presence declined as a proportion of the total population, falling from 25.7 percent in 2000 to 22.9 percent in 2015, a share that is 3.8 percentage points lower in just 15 years' time (Exhibit 4).

A similar slow rate of increase occurred within each specific age subgroup of children. Meanwhile, the increase among all adults older than 55 was extraordinary, nearly 50 percent in just 15 years (Exhibit 4). In this perspective children might seem to be declining in importance, while older adults loom ever larger in the national priorities. That would be a mistake, because the opposite is true: Children take on greater importance by virtue of their relatively small

numbers, especially relative to the surging numbers of older adults, and in light of the crucial roles they are expected to perform when they are grown.

**Exhibit 4.** Growth in Number of Children and Adults from 2000 to 2015

Ages			Growth		Share of the Total Population		
	2000	2015	Absolute Growth	Percent Growth	2000	2015	Change in Share
0 to 4	19,175,798	19,907,281	731,483	3.8	6.8	6.2	-0.62
5 to 9	20,549,505	20,487,176	-62,329	-0.3	7.3	6.4	-0.93
10 to 14	20,528,072	20,622,330	94,258	0.5	7.3	6.4	-0.88
All children under 18	72,293,812	73,645,111	1,351,299	1.9	25.7	22.9	-2.78
Adults 18 and older	209,128,094	247,773,709	38,645,615	18.5	74.3	77.1	2.78
Adults 55 and older	59,266,437	88,638,671	29,372,234	49.6	21.1	27.6	6.52
Total Population	281,421,906	321,418,820	39,996,914	14.2	100	100	--

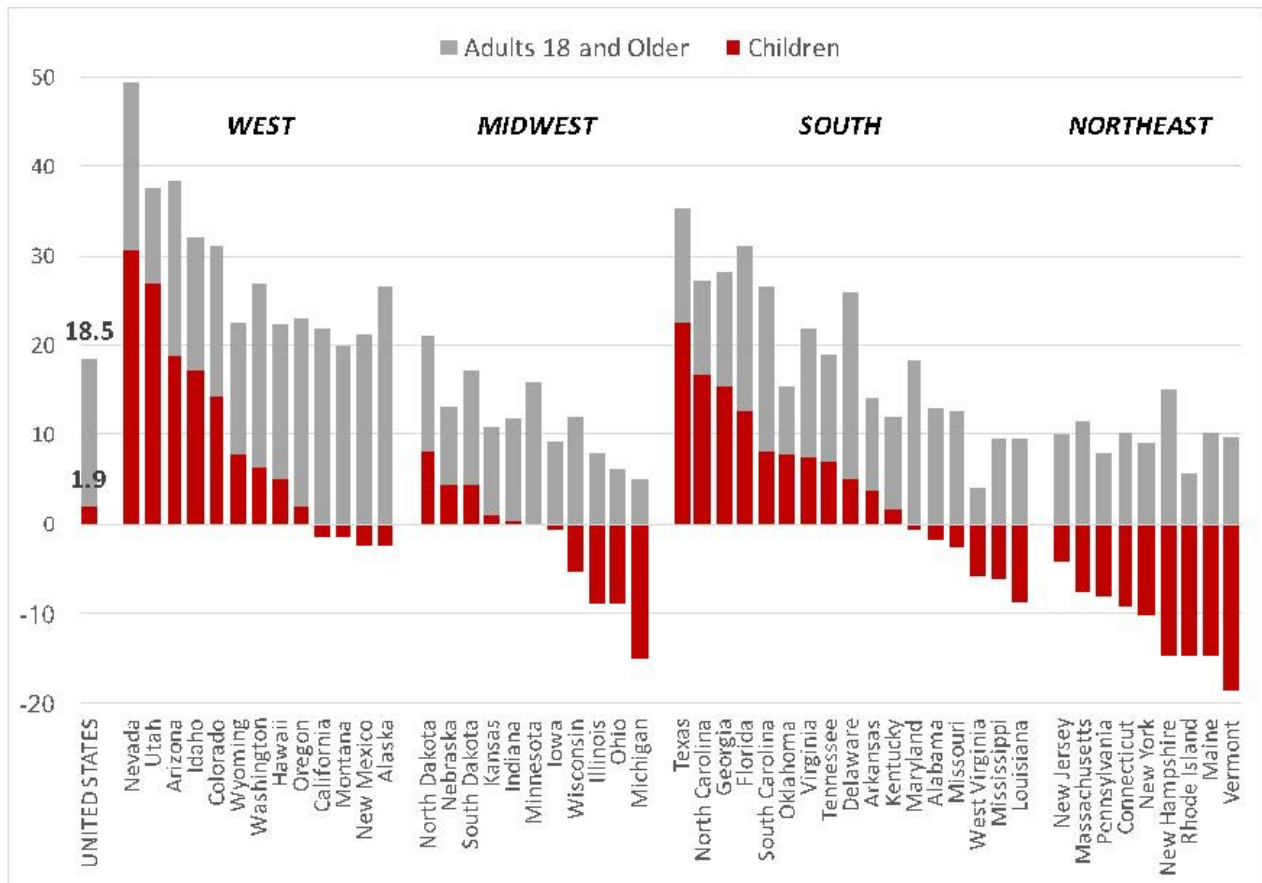
*Source:* U.S. Census Bureau, 2000 census, P012; 2015 population estimates, PEP\_2015\_PEPAGESEX

Some states have greater growth in children than others, as shown in Exhibit 5. In fact, half of all the states (25) experienced a net decline in the number of children under age 18: all 9 states in the Northeast, 6 in the South, 6 in the Midwest, and 4 in the West. In contrast, of the other half that gained children, 9 states (4 in the South and 5 in the West) experienced more than a 10 percent growth.

Nonetheless, the main point to observe is that in every state the increase in adults over age 18 was substantially more rapid than the increase in children under age 18. A total of 38 states experienced more than 10 percent growth in adults (Exhibit 5). While the shortfall of children might appear greatest in the states where children declined in number, even in states where children grew by a substantial percentage the growth of adults often was twice as rapid. Nowhere is the number of children keeping up with growth in the rest of the population.

Rather than focus solely on growth rates, an alternate view examines the declining presence of children as a proportion of the total population in each state. The pattern is very similar in every age group of children, and here we look at elementary and middle school age children between ages 5 and 14. Consider the 2015 prevalence of children ages 5 to 14 and the declines in that presence since 2000 (Exhibit 6).

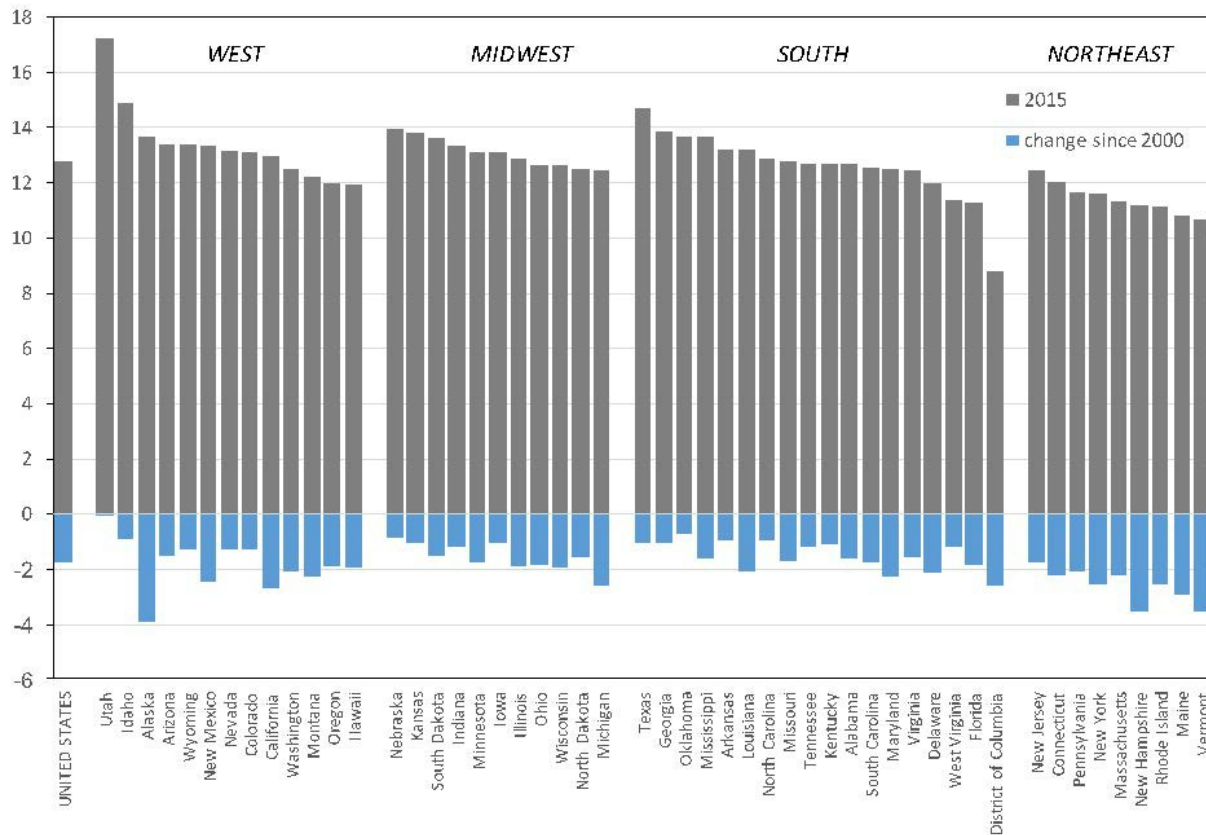
**Exhibit 5.** Percentage Growth of Children (Under Age 18) Compared to Growth of Adults 18 and Over, 2000 to 2015



Source: U.S. Census Bureau, 2000 census, P012; 2015 population estimates, PEP\_2015\_PEPAGESEX

Among the school-age children, ages 5 to 14, the percentage presence in each state in 2015 ranged between about 11 and 14 percent of the population, excepting Utah, Idaho and Texas, on the high side. The national loss in this age range since 2000 was –1.8 percentage points, while for all children under age 18, totaling more subgroups, the loss was –2.8. In either case, the prevalence share of children declined by more than one-tenth for the nation. Remarkably, broadly similar losses in children’s presence share are observed across the states. Fully 24 states exceeded the national decline among these children and only Utah escaped without any decline in the presence of children (Exhibit 6). The Northeast region stands out for its consistently lower presence of children in the population.

**Exhibit 6.** Presence of Children Ages 5 to 14 as a Share of Each State’s Population in 2015, and Changes since 2000



Source: U.S. Census Bureau, 2000 census, P012; 2015 population estimates, PEP\_2015\_PEPAGESEX

Despite the overall prevalence of declining children, a few states do stand out for their more prominent roles. The greatest number of children has been captured by the largest states that have recently grown the fastest. Conversely, other large states that are more rapidly aging, or that have recently slowed their growth the most, have incurred the greatest losses. This is displayed in Exhibit 7, which assesses the distribution of gains and losses of children ages 5 to 14. Among all the states with positive gains in children, Texas captured 36.1 percent of the growth, while the state with the next largest share, Florida, captured only 9.3 percent. Conversely, among all the states with losses of children, New York accounted for 18.7 percent of the losses, followed by Michigan with 12.6 percent and California with 11.4 percent.

The unevenness of this distribution of children raises a number of questions about the level of resources supplied in each state for children’s healthcare and education. Are the nation’s children equally well served everywhere, and in particular how well are the growing states able to keep up with the urgent needs of their children? These questions have national importance

because, as to be discussed in a later section, a very large share of children grow up to join the workforce in states other than where they were born and raised.

**Exhibit 7. Greatest State Gains and Losses in Children in Absolute Numbers**

<b>5 Biggest Winners of Children 5 to 14</b>	Texas	Florida	Georgia	North Carolina	Arizona	United States
Total Number of Children 5 to 14 in 2000	3,285,376	2,088,742	1,223,343	1,113,920	768,080	41,101,548
Total Number of Children 5 to 14 in 2015	4,042,191	2,283,483	1,416,490	1,293,660	917,797	41,109,506
Numerical Growth of Children 5 to 14, 2000 to 2015	756,815	194,741	193,147	179,740	149,717	7,958
Share of all Positive Growth Nationwide	36.1%	9.3%	9.2%	8.6%	7.1%	100%

<b>5 Biggest Losers of Children 5 to 14</b>	New York	Michigan	California	Pennsylvania	Illinois	United States
Total Number of Children 5 to 14 in 2000	2,684,290	1,492,193	5,296,702	1,691,794	1,834,955	41,101,548
Total Number of Children 5 to 14 in 2015	2,298,180	1,232,854	5,062,372	1,496,122	1,658,608	41,109,506
Numerical Growth of Children 5 to 14, 2000 to 2015	(386,110)	(259,339)	(234,330)	(195,672)	(176,347)	7,958
Share of all Negative Growth Nationwide	18.8%	12.6%	11.4%	9.5%	8.6%	100%

Source: U.S. Census Bureau, 2000 census, P012; 2015 population estimates, PEP\_2015\_PEPAGESEX

**III. DECLINING WORKFORCE GROWTH FROM FEWER CHILDREN**

The lack of growth among children leads directly to a lack of growth in the workforce. A slowdown in growth of the working age population depresses the pool of workers to support economic growth while concurrently depressing growth in the number of consumers who drive demand in the economy. For this reason both Republican<sup>13</sup> and Democratic<sup>14</sup> administrations use the rate of working age growth to help explain and forecast the rate of economic growth (e.g., Gross Domestic Product, or GDP). The declining number of children is a direct cause of the nation’s slowing prosperity.

The massive baby boom generation is exercising its right to retire—already over one-third have done so.<sup>15</sup> As a result, our rate of labor force growth is rapidly slowing, falling from 1.6 percent

<sup>13</sup> Bush Table 3-2, p. 99 <https://www.gpo.gov/fdsys/pkg/ERP-2004/pdf/ERP-2004.pdf>

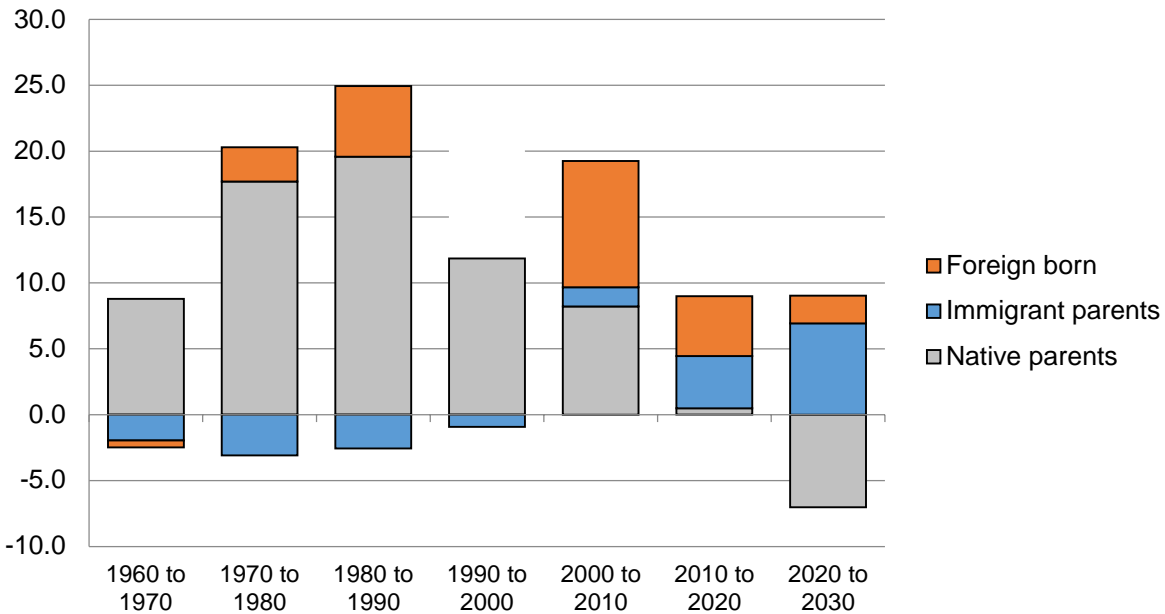
<sup>14</sup> Obama Table 2-3, p.113 <https://www.gpo.gov/fdsys/pkg/ERP-2016/pdf/ERP-2016.pdf>

<sup>15</sup> <https://www.bls.gov/opub/mlr/2015/article/labor-force-projections-to-2024.htm>

in the 1980s to barely one-half of one percent per year from 2015 through 2030.<sup>16</sup> A recent National Academy of Sciences report<sup>17</sup> spotlighted how critical for labor supply are the grown children of both native-born and immigrants this decade and next (Exhibit 8). As early as 1990, out of the growth of 20 million in the prime working ages of 25 to 64, 12 million was from the grown children of native-born parents, while 8 million (40 percent) was supplied by immigrants and their children.

**Exhibit 8.** Net Change in Working Age Population Each Decade, by Nativity  
(Foreign Born, Born in U.S. of Immigrant Parents, or Born of Native-Born Parents)

figures in millions



Source: Figure 2.5 in Francine D. Blau and Christopher Mackie, eds., *The Economic and Fiscal Consequences of Immigration*, Panel on the Economic and Fiscal Consequences of Immigration. Washington, D.C.: National Academy of Sciences, Engineering and Medicine, 2016).

This century is totally different. Growth in the working ages from 2010 to 2020 has declined to 9 million, and only half a million (6 percent) comes from children of native born, the rest from immigrants and their children (Exhibit 8). After 2020, as the baby boomers fully depart the workforce, total growth will be depressed to only 2 million. With so many baby boomer retirees, we face net losses of 7 million workers of native-born ancestry. Were it not for the net increases in the immigrant children now coming of age (7 million), the workforce would sustain unprecedented losses. Immigrants themselves are expected to contribute relatively little to

<sup>16</sup> <https://www.bls.gov/opub/mlr/2015/article/labor-force-projections-to-2024.htm>

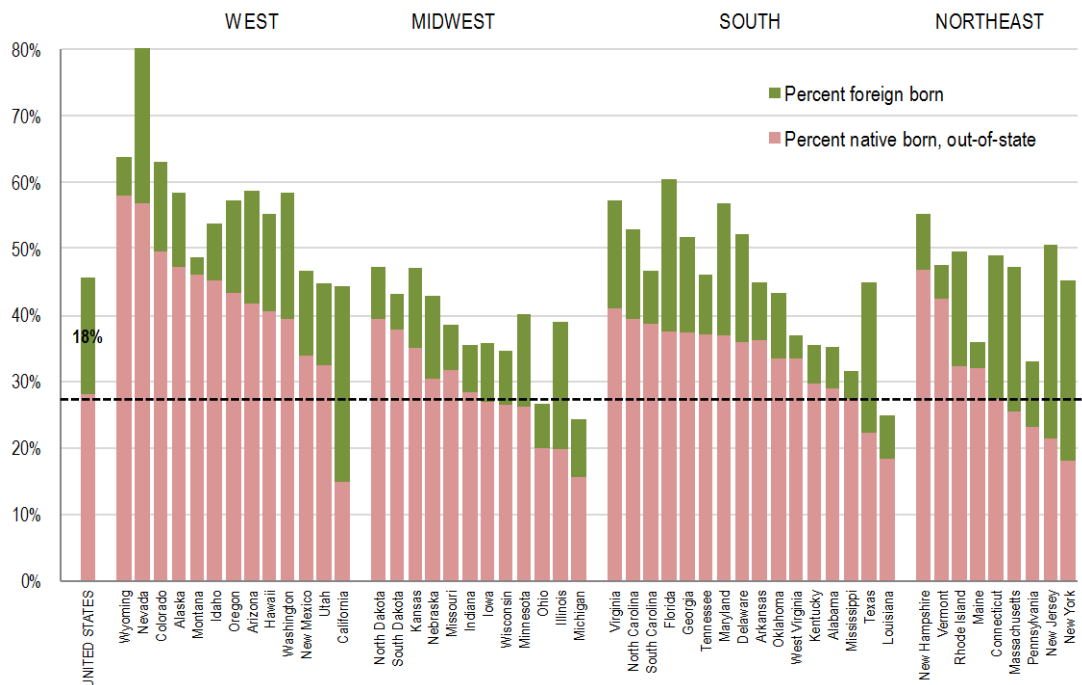
<sup>17</sup> Table 2-4 and Fig 2-5 in NAS report <https://www.nap.edu/catalog/23550/the-economic-and-fiscal-consequences-of-immigration>

future workforce growth (because the previous immigrants of the large waves in the 1980s and 90s will be retiring).

Adults aged 25-34 represent the new workforce in each state. On average in recent years, two-thirds (67.4 percent) of these new workers are U.S. born residents and remain in their state of birth. However, they are joined by many other young adults who were U.S. born in other states or who are immigrants. In fact, these foreign-born and out-of-state-born workers can make up a considerable share of a state’s workforce, as shown in Exhibit 9.

What is notable and underappreciated is that the vast majority of states rely heavily on both foreign-born and out-of-state native-born individuals as significant portions of their working population. Nevada has the highest reliance on out-of-state-born population, while the most self-sufficient states are Louisiana, Michigan, and Ohio (Exhibit 9). Viewed another way, virtually all states rely on grown children born in other states for a substantial share of their workforce. In only 9 states is the out-of-state native-born share less than 25 percent of their new working age population.

**Exhibit 9.** Percent of New Working-Age Population (Ages 25 to 34) Who Were Born Outside Their Present State of Residence, 2015



Source: ACS 2015, Table B06001



These data on workers' birthplaces demonstrate that the states depend on each other's support systems to raise and educate a sizable share of their future workforce. In this regard, the nation's states are highly interdependent. Programs that benefit child development thus have multiple beneficiaries, including not only the children themselves, but also their home state, other states where they will live, and the nation as a whole. This is explored more in Section VI.

#### **IV. A SUMMARY INDICATOR OF THE GROWING IMPORTANCE OF CHILDREN**

The many consequences of the growing size of the retirement age population relative to young replacements are not widely appreciated, but they loom large over the future of this country. To provide a more pointed perspective on the growing importance of children in this context, a summary indicator of children's growing societal importance is helpful for comparing over time and across the 50 states.<sup>18</sup>

The top-heavy nature of our growing population is well-described by the "senior ratio" that signifies the weight of the number of people age 65 and older relative to the number who are working ages, 25 to 64.<sup>19</sup> In the Social Security system, this ratio is expressed by the number of supporting workers per retiree who is a beneficiary. That support ratio has steadily declined from 5.1 supporters for every beneficiary in 1960, to 3.3 in 2005, and falling eventually to 2.1 in 2040.<sup>20</sup> However, the problem is not really that the supporters are declining. Rather, the problem is that the number of older Americans is rapidly rising and placing increasing weight on a relatively constant number of young adults who are the economic supporters.

---

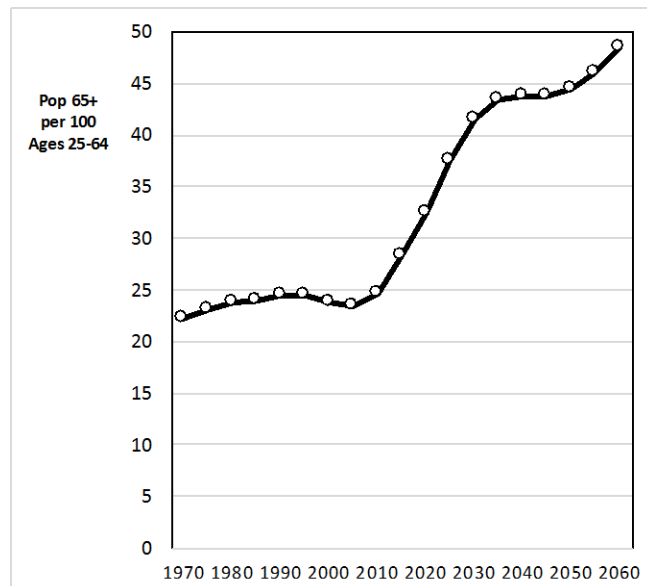
<sup>18</sup> This extends the children's importance index that was first developed in Dowell Myers, "California's Diminishing Resource: Children," special report, Lucile Packard Foundation for Children's Health and USC Population Dynamics Research Group, 2013.

<sup>19</sup> The senior ratio is a variation on demographers' "old age dependency ratio." A principal difference is that working age in that traditional ratio was set to begin, variously, at 15, 16 or 18, which may serve well for farm labor or uneducated manual workers but not in our information-based economy that relies on extensive training, followed by internships and apprenticeships. Also, adults in the U.S. become net fiscal contributors (paying more in taxes than receiving in government services) right around age 25, according to a recent study by the National Academy of Sciences (Figure 8-12 in Francine D. Blau and Christopher Mackie, eds., *The Economic and Fiscal Consequences of Immigration*, Panel on the Economic and Fiscal Consequences of Immigration. Washington, D.C.: National Academy of Sciences, Engineering and Medicine, 2016).

<sup>20</sup> Reznick, Gayle L., Dave Shoffner, and David A. Weaver 2006 "Coping with the Demographic Challenge," *Social Security Bulletin*, Vol. 66, No. 4  
<https://www.ssa.gov/policy/docs/ssb/v66n4/v66n4p37.html>

The senior ratio, as presented earlier, directly measures this growing weight of the older population on the working age Americans who are the pillars of the economy (Exhibit 10). This weight applies to all facets of the economy and taxpayer base, not just Social Security. It even applies to the housing market, because greater numbers of older home sellers will be seeking buyers among the young. The clear implication is that the young pillars of the economy must be strengthened in order to carry the growing weight of seniors in society and maintain a well-functioning economy.

**Exhibit 10.** A Soaring Senior Ratio: Number of People Age 65 and Older per 100 People of Full Working Age (25-64), 1970 to 2060



*Source:* Author calculation from population estimates and projections by the U.S. Census Bureau

### A. Logic of the Index Construction

The challenge is that we must begin this strengthening of the supporting generation while our children are young, not after they become adults. To help encourage better awareness of children’s importance, what is needed is an indicator for describing the growing weight of societal expectations placed on children when they are grown, basing this on their anticipated potential contribution when they grow into future workers, taxpayers, and consumers.

Children’s societal importance is most clearly indexed by the weight of the senior ratio that is anticipated when they arrive at age 25 and enter full working age. The simple assumption is that the growing senior ratio represents the growing economic burden thrust on our children and, hence, their growing importance to society. Granted that it is difficult to see into the future, when today’s 5 year-old becomes a 25 year-old worker, our most certain evidence is found in the truisms of population age projections. We are certain these kids will grow up and

we are also agreed, albeit reluctantly, that middle aged Americans will also grow older, swelling the ranks of the seniors in future years. These age relations are highly predictable and they raise the stakes on our ability to enable each child to thrive and eventually contribute.

Construction of an *Index of Children's Societal Importance* is displayed for the U.S. population in Exhibit 11, showing how the senior ratio of a future year (25 years after birth) is used to measure the societal importance of children. This measure is indexed to the 1975 birth year (2000 senior ratio) equaling 100%, because children always were 100% important. However, by the birth year of 2035 (senior ratio for 2060), the Index has climbed to 203%, signifying that children are fully twice as important as in the base year.

That increase in the index measures the greater dependence that society will place on the children born more recently. Of course the newly entered working age members will continue to supply benefits for another 40 years beyond their entry year. While it might be desirable to provide an average importance that spans the entire working age, that would require senior ratios far into the future and the latest year for which the Census Bureau supplies age projections is 2060. Measuring the entire working age is thus not possible for any children born in the 21<sup>st</sup> century.

## **B. Index Findings on Children's Growing Importance**

Index results show that this measure of children's societal importance did not change much until after the 1985 birth year. Those children then reached full working age in 2010. After that point the rising senior ratio began to have an impact on the children's importance index. The children born today are entering a world where their importance has elevated to 184%, so they are 84% more important than the 100% importance established for the group born in 1975 or earlier.

In some states that have older populations, children already were more important than the national average. A comparison of the Index trends in the nation and the largest states shows the differences observed for children born in 1975, who reached age 25 in 2000 (Exhibit 12). In California and Texas, states with younger populations due to greater migration of young adults, the senior ratios were lower than the national average and children assumed lower societal importance. Conversely, in New York and Florida, the state populations were older and children already assumed greater importance.

**Exhibit 11.** Index of Children’s Societal Importance—Derived from the Senior Ratio at the Time a Child Grows to be Age 25 and Enters the Roles of Working Age

	Senior Ratio	Birth Year if 25 Years Old	Relative Ratio	Index of Societal Importance
1970	22.22	1945	0.934	93%
1975	23.13	1950	0.972	97%
1980	23.83	1955	1.002	100%
1985	24.03	1960	1.010	101%
1990	24.49	1965	1.029	103%
1995	24.52	1970	1.030	103%
<b>2000</b>	<b>23.79</b>	<b>1975</b>	<b>1.000</b>	<b>100%</b>
2005	23.51	1980	0.988	99%
2010	24.66	1985	1.036	104%
2015	28.30	1990	1.189	119%
2020	32.55	1995	1.368	137%
2025	37.53	2000	1.577	158%
2030	41.58	2005	1.748	175%
2035	43.35	2010	1.822	182%
2040	43.83	2015	1.842	184%
2045	43.82	2020	1.842	184%
2050	44.50	2025	1.871	187%
2055	46.02	2030	1.934	193%
2060	48.35	2035	2.032	203%

**Notes** Senior ratio defined as number age 65 and older divided by number ages 25 to 64, times 100 ; Index equals the senior ratio 25 years after their year of birth divided by the senior ratio in 2000

*Source:* Author calculation from Exhibit 10

The children born in 2005 and turning age 12 in 2017 have substantially greater importance than their predecessors in every state. Average importance in the nation is 174.8% compared to the base year. In California, importance of this age group has leaped to 165.1% despite starting with lower than average importance in the base year (Exhibit 12). Texas has 144.9% importance, while New York and Florida are substantially higher after starting with above average importance. (More details for all 50 states are presented in Appendix B.)

**Exhibit 12.** Children’s Index of Societal Importance for the Nation and Largest States

Year Born	1975	1990	2005	2020
Year Age 25	2000	2015	2030	2045
United States	100%	118.9%	174.8%	184.1%
California	88%	105.8%	165.1%	190.0%
Texas	84%	96.2%	144.9%	161.7%
New York	105%	116.7%	163.0%	171.6%
Florida	147%	158.3%	199.4%	210.0%

Source: Author calculation based on Appendix B

Children may be a diminishing share of the population, and on that basis it could be tempting to cut the budget allocation for children’s programs. Yet the trends reflected by the *Index* highlight the growing importance of children and the much greater productivity they will need to achieve in the future if they are to fulfill the working age roles and social responsibilities expected of young adults. We must depend on all our children being highly productive when they are grown. But it is incumbent on today’s grown-ups to ensure every child has opportunity to develop to their very best capabilities. Investing more in child care, health and education will lay the essential foundation for a nation of sustained prosperity in future years.

## V. HUMAN ASSETS IN JEOPARDY

Given the newfound societal importance of children in the new century, it might seem alarming when we review the current state of care afforded our children. Much of the responsibility lies with parents, many of whom do the best they can with the meager resources at their disposal. A growing effort is building among nonprofit organizations, volunteer groups, and the philanthropic sector. Yet the bulk of support services are provided by government. The division of responsibility between the federal government and the states is that the former is focused more on support for the elderly, while the states are charged with investing in the young through education and other local services. Unfortunately, state-level support for children is very uneven. Ironically, as will be seen, the states with the largest shares of the nation’s children are investing less than those with fewer children. The consequences are not favorable, either for those states or for the nation, and certainly not for the children.

## A. A Plague of Child Poverty

Because their developmental trajectory is established in the first years of life, the most corrosive single factor that undermines the nation's future is poverty at young ages.<sup>21</sup> Child poverty has increased nationwide since 2000. Despite small recent improvements following recovery from the recession, the poverty rate for all children under 18 increased from 15.9 percent in 2000 to 20.7 percent in 2015, an increase of 4.8 percentage points, a greater than one-third increase. The poverty rate suffered by young children is twice as high as for adults in every age group older than 45.

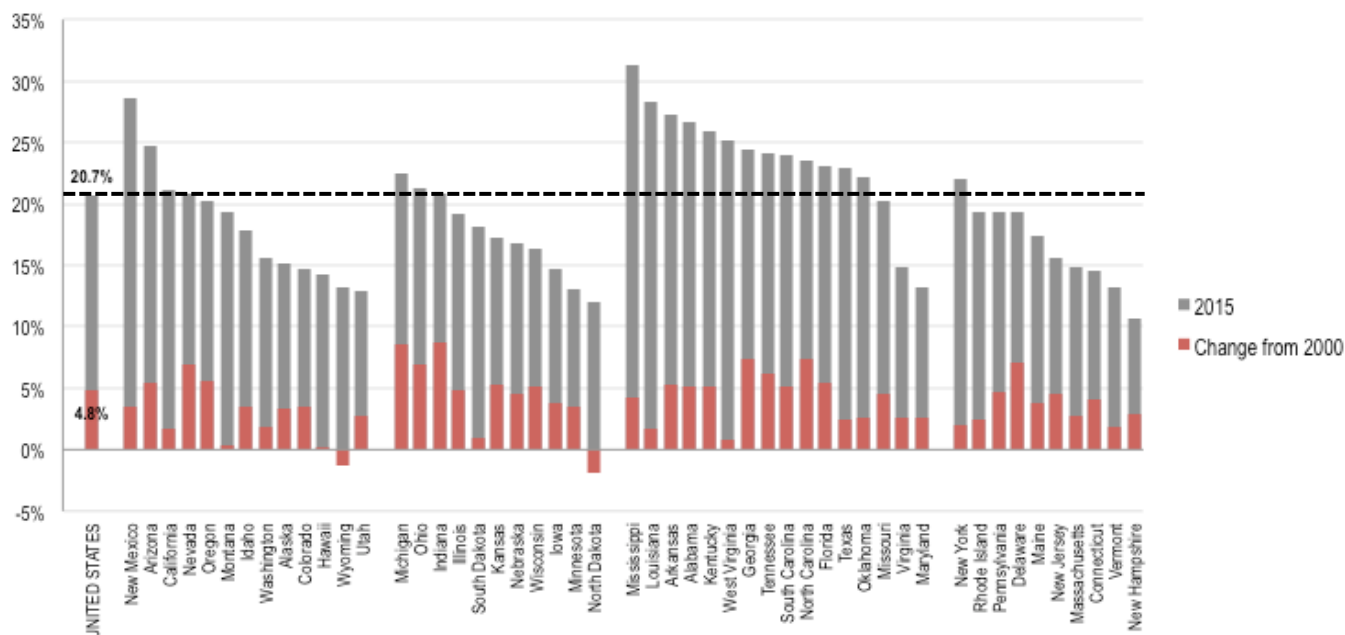
The official level of income used to delineate federal poverty levels and determine eligibility for public programs is based on outdated data, and its use deprives many children and families from needed assistance. Even children in families whose incomes are up to 200 percent of the official poverty threshold, which includes 43.9 percent of all children, suffer the effects of inadequate resources, including lack of food, housing and healthcare. They experience income deprivation, albeit of a less severe nature, and they also may be eligible for some supporting services. Living below 138% of the poverty threshold, a key eligibility criterion for Medicaid, are 30.5 percent of children.

The prevalence of child poverty varied across the states in 2015 but it has increased in nearly every state (Exhibit 13). Fully 19 states suffered deeper increases in poverty from 2000 to 2015 than the national average of 4.8 percentage points, most notably in the Midwest and South regions. The increases in Michigan, Ohio and Indiana are most alarming because they are so great, accounting for more than one-third of their current poverty rate.

---

<sup>21</sup> Child poverty has been estimated by one study to reduce national economic output and productivity by an equivalent of 1.3% of U.S. GDP, increase the cost of crime by 1.3% of GDP, and raise health costs by 1.2% of GDP. Holzer, H. J., Schanzenbach, D. W., Duncan, G. J., Ludwig, J. (2008). The Economic Costs of Childhood Poverty in the United States. *Journal of Children and Poverty*. 14 (1): 41-61.

**Exhibit 13.** Growth in Child Poverty by State, 2000 to 2015



Source: 2000 Census, Social Explorer, T114; 2015 ACS, Social Explorer, T180.

## B. The Opportunity for an Important Return on Investment

Earlier sections of this report have underscored how much more dependent the United States will be on today’s children when they are grown than was the case in the 20<sup>th</sup> century. However, early poverty and a lack of healthcare and educational investment cause worse health and educational outcomes, leading to long-term lowered productivity and an overall loss in the productivity of this vital, future tax base. A comprehensive review of the scientific evidence on human capital development through program investments in children has been conducted for this study and is included in Appendix D.

Investments in children are good for the children, and they are financially rewarding to the taxpayers. One of the most convincing studies to date used IRS tax records to study how access to Medicaid during childhood affected individuals in early adulthood.<sup>22</sup> In addition to life-long health benefits, the study showed that the children grew to be better earners and taxpayers. The study showed that about 56 cents of every dollar spent on childhood Medicaid is recouped by the federal government through tax payments by the time the covered children turn age 60. Of course the same children yielded other benefits as well, such as lower reliance on

<sup>22</sup> Brown, DW., et al. (2015). “Medicaid as an Investment in Children: What is the Long-Term Impact on Tax Receipts?” NBER Working Paper 20835. Retrieved from <http://www.nber.org/papers/w20835>.

government support programs and stronger contributions to the economy overall. For more details, please see Appendix D.

Numerous other studies have focused on early childhood education benefits, finding for example that, for every \$1 initially invested, early learning initiatives yield up to \$8.60 in societal benefits over a child's lifetime,<sup>23</sup> with other studies finding lifetime benefits as high as \$17.<sup>24</sup> Children enrolled in statewide early childhood education programs are estimated to earn approximately \$10,000 to \$30,000 more over their career, which aggregates to an increase of about \$5 to \$16 billion in nationwide earnings over the career of each year's enrollment cohort.<sup>25</sup> In addition to the gains in productivity, these types of children's programs create societal economic benefits by reducing anti-poverty spending and reducing crime.

Finally, a clear economic argument can be made for investing in the most disadvantaged children, due to a bigger potential payoff and return in investment. Studies show that family income has a direct effect on a child's educational achievement, as measured through test scores, and that the greatest gains are made for investments in children from the most impoverished families.<sup>26</sup>

### **C. Underfunding of Investment in Children**

Federal programs, primarily Social Security and Medicare, have dramatically reduced poverty among the elderly, reducing the rates from 35.9% in 1959 to 8.8% in 2015.<sup>27</sup> Today's challenge is how to lower the poverty rate of children and increase the probability of a strong economy in the future.

Only about 10 percent of the federal budget goes to children, through tax credits, SNAP and child nutrition programs, income security, and education.<sup>28</sup> In the FY 2015 budget, the federal

---

<sup>23</sup> Office of the President (2014). The Economics of Early Childhood Investments. White House, Washington D.C.. Retrieved from [https://www.whitehouse.gov/sites/default/files/docs/early\\_childhood\\_report1.pdf](https://www.whitehouse.gov/sites/default/files/docs/early_childhood_report1.pdf)

<sup>24</sup> Schweinhart, L. et al. (2005). Lifetime Effects: The High/Scope Perry Preschool Study Through Age 40. Summary, Conclusions, and Frequently Asked Questions. Retrieved from [http://www.highscope.org/file/research/perryproject/specialsummary\\_rev2011\\_02\\_2.pdf](http://www.highscope.org/file/research/perryproject/specialsummary_rev2011_02_2.pdf)

<sup>25</sup> Ibid.

<sup>26</sup> Dahl, G. B.; Lochner, L. (2012). "The Impact of Family Income on Child Achievement: Evidence from the Earned Income Tax Credit." *American Economic Review*. 102 (5): 1927–1956.

<sup>27</sup> Census Bureau, Historical Poverty Tables, Table 3 (<https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-people.html>)

<sup>28</sup> Edelstein, S. (2016). Kids' Share 2016: Federal Expenditures on Children Through 2015 and Future Projections. Urban Institute. Retrieved from <http://www.urban.org/sites/default/files/alfresco/publication-pdfs/2000934-Kids-Share-2016-Federal-Expenditures-on-Children-through-2015-and-Future-Projections.pdf>



government spent 6 times more on the elderly per capita than on children, and across all levels of government in 2013, the elderly still saw 2.3 times the resources per capita that children did.<sup>29</sup>

The current outlook appears even more dire for children’s support services. Federal budget cuts from 2011 to 2015 disproportionately impacted children’s programs, with a loss of 9.4% as compared to an average cut in federal spending of 4.1%.<sup>30</sup> Late in the Obama administration the future did not look much better: As a percentage of GDP, spending on children was scheduled to fall by over 25% over the next decade, predominately in K-12 education and early education and care, as well as in nutrition, housing, and social services.<sup>31</sup> Now, in the first months of the Trump administration, the imbalance of underinvestment in children’s services could grow even more severe than previously expected, based on recent budget deliberations.

As of 2016, the projected decline in federal spending on children far exceeds the fall in children’s share of the population, which is only expected to decrease by 1 percentage point by 2026 (Exhibit 16). Federal per capita spending on the elderly will have increased by \$24,000, while spending on children per capita will have increased by just \$4,400. Spending on K-12 education is projected to fall not just as a share of GDP but also in actual dollars, from \$41 billion (2015) to \$39 billion (2026). Such federal underinvestment in children is detrimental to their future productivity and, when they grow into adulthood, will undermine their potential tax contributions and thus weaken programs to support seniors in the future.

**Exhibit 14.** Federal Budget Trends for Seniors and Children, 1960 to 2026

			1960	2015	2026 (projected)
<b>Population</b>	Share	Elderly (>65)	9%	15%	19%
		Children (<19)	37%	24%	23%
<b>Budget</b>	Percent GDP	Elderly (>65)	2.1%	7.6%	–
		Children (<19)	1.8%	2.6%	2.3%
	Spending per capita (In 2015 \$)	Elderly (>65)	\$4,000	\$28,000	–
		Children (<19)	\$278	\$4,673	–

Source: *Urban Institute Kids' Share 2016*

<sup>29</sup> Ibid.

<sup>30</sup> Lesley, B. (2016). The Racial Generation Gap and the Future of Our Children. First Focus. Retrieved from <http://firstfocus.org/wp-content/uploads/2016/05/The-Racial-Generation-Gap-and-the-Future-for-Our-Children.pdf>

<sup>31</sup> Edelstein, S. Ibid.

## VI. A CALL FOR STRONGER NATIONWIDE INVESTMENTS IN CHILDREN

State and local governments have traditionally provided the bulk of funding for children. Outside of tax provisions (deductions for dependents and the like), only 36 percent of government expenditures on children come from the federal government.<sup>32</sup> Such a decentralized system of children's support assures disparities in services and opportunities for children. Some states may not have the resources to bestow adequate benefits upon their children. Others may have the resources but choose not to invest them in children.

The effects of interstate differences vary based on the geographic distribution of children among states. Vermont may have very impressive and generous children's support policies but these are less contributory to the nation's well-being than policies in Texas and California, or other states that are home to a much greater share of the nation's children. Yet this may seem haphazard.

Given that a large share of Americans end up living and working outside their state of original residence, states are dependent on each other to assure we have an able and competent national workforce. Fully 38.9 percent of the nation's U.S. born residents are living outside their birth state, where presumably at least their early childhood was spent.<sup>33</sup> This dispersion of adults across state lines is substantially greater for more educated people, 45.7 percent of those who are college grads and 53.1 percent of those with postgraduate education (compared to 30.8 percent of those with only a high school degree).

States are inextricably linked together: They share a pool of workers that crosses state lines, and therefore the states are beneficiaries of other states' investments in children who potentially will grow to be more accomplished adults. In light of this substantial interstate sharing, the question must be asked: How well are the nation's children being cared for and nurtured to their full capabilities by their respective states of residence?

---

<sup>32</sup> Ibid.

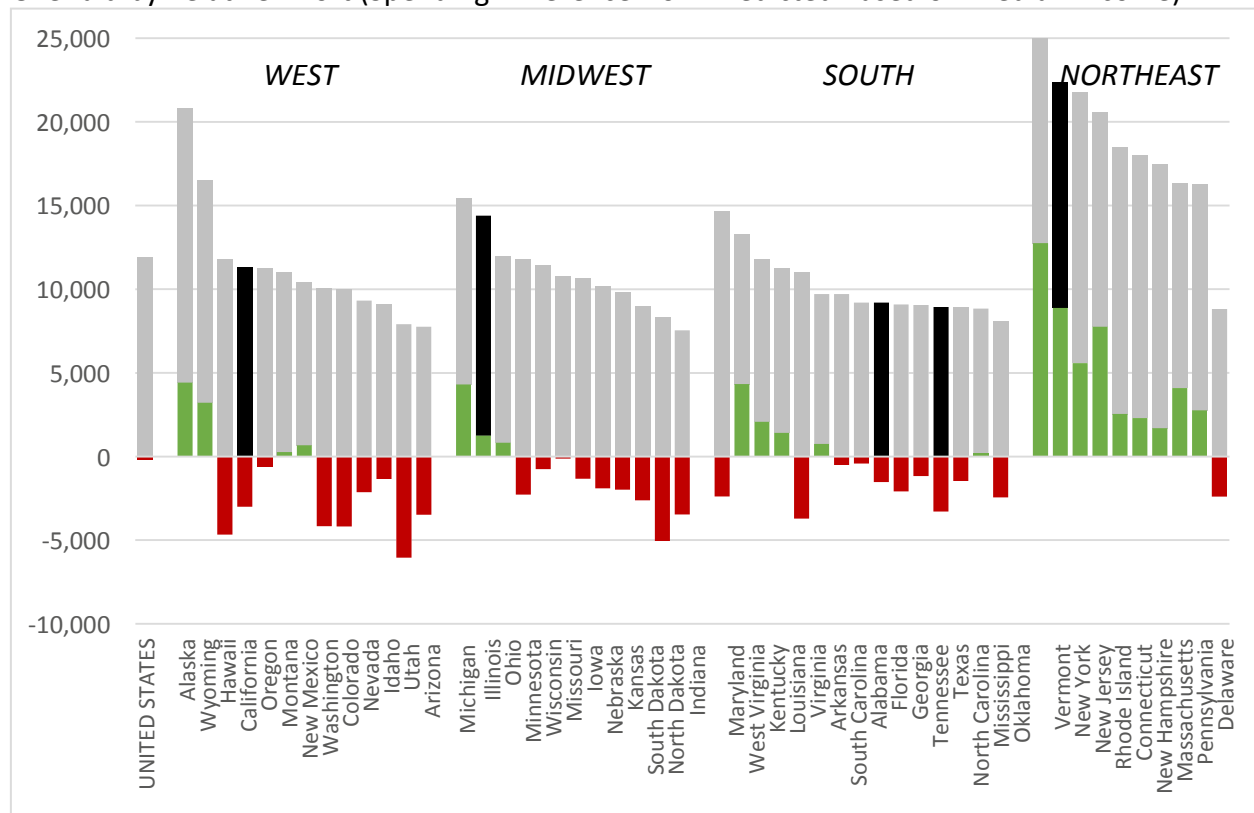
<sup>33</sup> Analysis of 2015 American Community Survey, table B06009, age 25 and older.

## A. Expenditures for Public Education

There are substantial and sometimes disturbing differences in state support for K-12 public education (Exhibit 15). Some of the disparities reflect differences in per capita income and tax rates in each state that affect revenue available for funding education (see Appendix C). Exhibit 15 shows the level of expenditures that are in excess of what would be predicted based on median household income levels in the different states (coded green), or alternatively the amount that is less than what would have been expected based on state income levels (coded red).

All states in the Northeast except Maine are contributing more education funding than might be expected. In other regions, a majority of states are more likely to contribute less than expected. Among the big five states, California, Texas, and Florida are all underspending on their students, and given their average incomes they surely could afford to do better.

**Exhibit 15.** State K-12 Expenditures Per Child in 2015 (total height of bar), Highlighting States with Largest Share of the Nation's Children (black), and Overlaid by Relative Effort (Spending Difference from Predicted Based on Median Income)



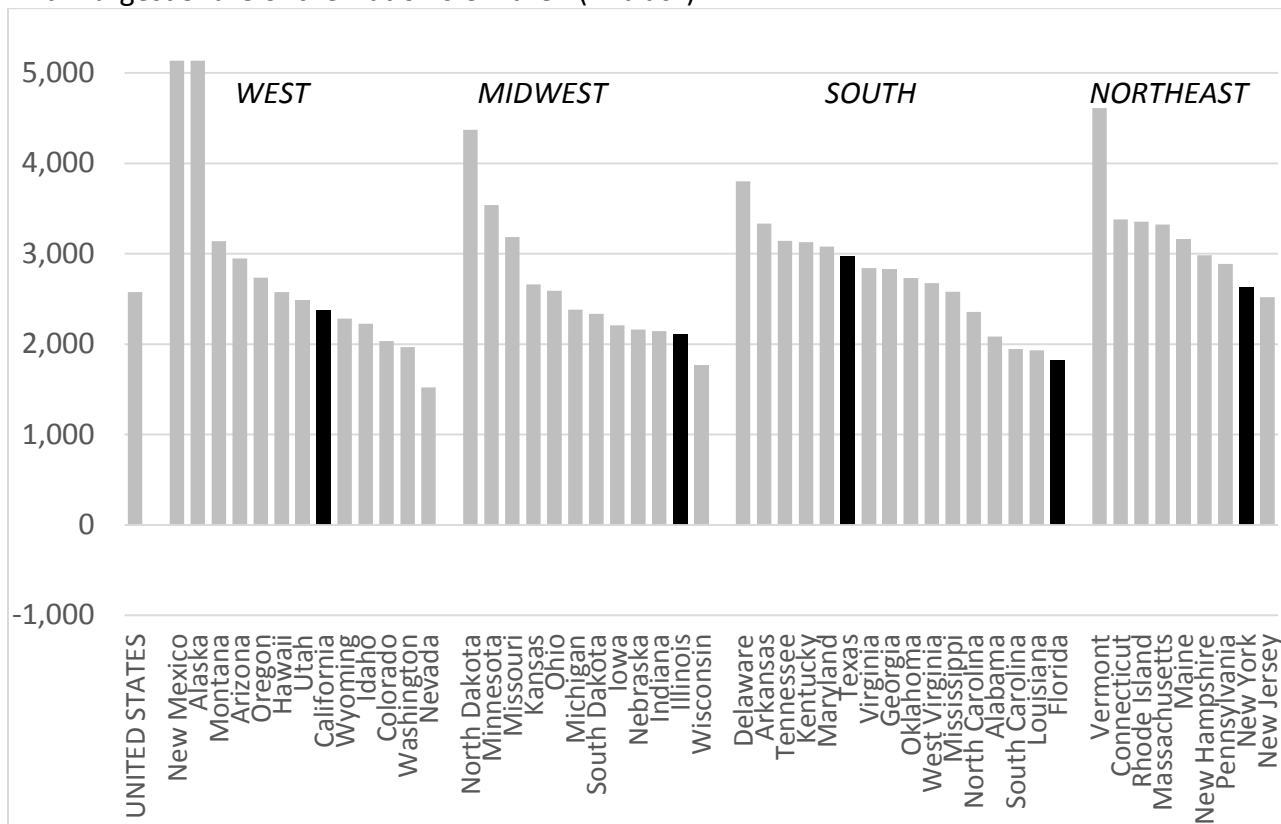
Source: 2016 National Education Association Rankings & Estimates  
[www.nea.org/assets/docs/2016\\_NEA\\_Rankings\\_And\\_Estimates.pdf](http://www.nea.org/assets/docs/2016_NEA_Rankings_And_Estimates.pdf)

## B. Expenditures on Medicaid to Support Children’s Health

Next up for analysis is the states’ contribution to healthcare for low income children, a policy that may become of increasing importance with changes in how the Medicaid program is administered. As with education spending, state spending is variable but somewhat equalized by large federal subsidies through the Medicaid program. Exhibit 16 reports average expenditures per enrolled child, which are \$2,577 for the nation as a whole. Of the five states with the largest child populations, only two, New York and Texas, provide Medicaid funding that equals or exceeds the national average. Florida, with \$1822, is particularly low. Unlike with education, spending is only slightly correlated with the median household income of states ( $r = 0.197$ ). The large role of federal subsidies has that equalizing effect.

What is highly variable across states is program enrollment, due to higher or lower prevalence of children under the poverty eligibility limits and due to differential outreach efforts by individual states. Medicaid program participation is 44.5 percent among children the nation, but the share of children enrolled in each state varies, generally from 30 to 52 percent, with exceptional outliers ranging from a low of 19.4 percent in North Dakota to 59.3 percent in New Mexico. Nonetheless, the level of average expenditure per enrolled child in different states is virtually uncorrelated with the states’ enrollment rates ( $r = -0.030$ ).

**Exhibit 16.** State Medicaid Expenditures per Enrolled Child in 2014, Highlighting States with Largest Share of the Nation's Children (in black)



Source: Kaiser Family Foundation, “Medicaid Spending by Enrollment Group,” and “Medicaid Enrollees by Enrollment Group;” Census Bureau, 2014 ACS, B19013

### **C. Children's Shift toward States with Lower Funding Levels**

In addition to the snapshot in 2014 or 2015, it may be useful to see how the level of state funding for children's support compares to the growth of children in each state. Since 2000, despite the overall decline in children's prevalence, as shown previously in Exhibits 4 to 7, there have been a dozen or more states that captured a growing share of the nation's children, while two dozen others have lost share. A reasonable question would be whether the states that are gaining a larger share of the nation's children are also supporting children with rising levels of funding that are appropriate to the rising importance of children.

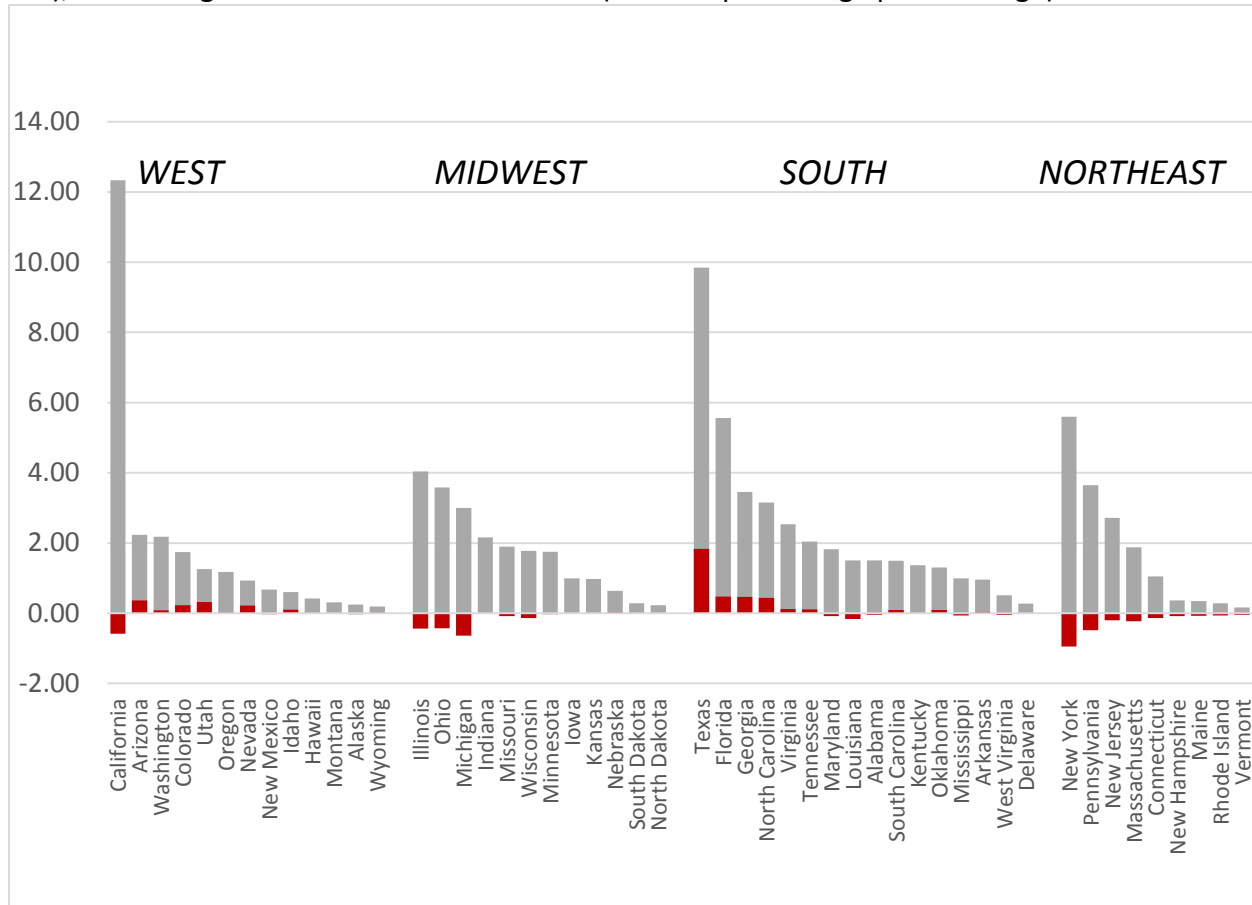
Exhibit 17 shows what share of the nation's school age population lives in each state. California and Texas stand out for their approximately 10 and 12 percent shares of the national total. New York, Florida and Illinois are the only other states with at least a 4 percent share of the nation's children. Between 2000 and 2015 Texas was the big gainer, growing its share of the children by nearly 2 percentage points. The only other states that increased their share by even 0.3 percentage point were Arizona in the west and Florida, Georgia and North Carolina in the South. Outside the South, all the other larger states lost share of the nation's children.

State Medicaid expenditures ought to follow their changing share of the nation's children. As noted above, only two of the five states with the largest shares of the nation's children have budgeted expenditures that met or exceeded the national average. However, states that increased their capture of the nation's children appear to generally maintain expenditures per child, perhaps aided by the incentive of federal subsidies that encourage higher funding levels (see Appendix C). Hopefully any revisions to federal subsidies will continue to assist states taking on growing responsibility for the nation's children.

In the case of education spending, which is more wholly reliant on state support, evidence shows a decrease of about \$5128 per pupil for every 1.0 percentage point increase in the state's capture share of the nation's children. Overall there is no state with a growing share of the nation's children that offered K-12 spending per student greater than \$12,000. In contrast, all 14 of the states that lost share maintained a spending level that was greater than \$12,000 (details are shown in Appendix C). If more of the nation's children receive lower education opportunities, due to reduced spending per student, that will impact other states as well because of the large fraction of children who will later move as young adults to live and work outside their home state.

In general, states are not increasing their public expenditures for either health or education commensurate with their increasing share of the nation's children, but education is falling most behind, and health also may be in jeopardy due to uncertainty of program changes.

**Exhibit 17.** States' Percentage Share of U.S. Children Aged 5 to 14 in 2015 (total height of the bar), and Change in Share from 2000 to 2015 (overlaid percentage point change)



Source: U.S. Census Bureau, 2000 census, P012; 2015 population estimates, PEP\_2015\_PEPAGESEX

## VII. CONCLUSION

The United States is entering a new era of reliance on a proportionally smaller population of children at the same time as we have a greatly increasing number of seniors to support. The critical need stems from our rapid shift to an aging society combined with an overly small number of children that will be available to fortify our base of workers, consumers and taxpayers. Children are the future pillars of the economy and we need to help them develop their individual capabilities to the strongest degree possible. A new urgency must be embraced by leaders in all sectors of society if our country is to continue to flourish and lead the world.

Adequately enabled, today's children will grow to be generators of industry, achievement and wealth. In recent decades, immigration helped to fill the ranks of workers in the United States and their efforts accounted for a substantial portion of our GDP. But immigration has slowed, and could be slowed further by new public policies. That means that our future will depend even more on homegrown talent and our ability to nurture and utilize the potential of all our children. The future burdens they will need to assume in terms of productivity and support for the elderly are up to twice as heavy as those carried by adults born in 1975 or earlier. It is incumbent on all of us to help prepare the younger generation for what lies ahead.

The societal benefits of investing in children have never been more clearly evident, nor has the need been more immediate. Both federal and state funding for children's programs have been granted meagerly and unevenly. Existing disparities among groups of children and among states' support for them portend poorly for our ability to meet the future needs of our country. The lobby for children is small and children themselves don't vote. Parents' allegiance to children is often tied to promoting the success of their own children, not to children in general, while others view childhood as in their past, not their future. Yet for every older person future well-being depends on the capacity and success of the nation's children. Absent healthy and well-educated children it will not be possible to fulfill our promises of broad support for older citizens, or for the public at large, and our country will fall behind others in its ability to produce and lead.

Echoes of the past shape children's policy today. We once had too many children, but now we have too few. We once had a senior population that had been ravaged by the Great Depression and was our most impoverished group, but today's older citizens, supported by Social Security and Medicare flourish, and have the lowest rates of poverty of all age groups. We once had a thriving workforce of Baby Boomers that elevated the nation's GDP, but now their retirements are draining the economy of resources and vigor.

This is the moment when the nation must remedy past neglect of our youngest citizens. Children are not a special interest group. They are not a luxury. Nor are the costs of assuring that children are well cared for solely the responsibility of their parents. The newfound and growing scarcity of children and the consequent doubled importance of each child to the nation's success indicates otherwise. Prudent leaders will recognize the exceptional value of stronger investment in the health and education of our youngest generation. That is the most assured pathway to greater well-being for all Americans. And it's the right thing to do for children today.



# Appendices

## Appendix A

### Children of Immigrant Parents in the Nation and States

Children can have either foreign-born or native-born parents. Although almost all children are U.S.-born, a sizable number have immigrant parents. (There also are a number of children who have native-born parents but are classified as immigrants themselves, perhaps because they are adoptees.) This is detailed in the top portion of Exhibit 9, showing the data separately for the youngest children (under age 6 in the source data for this table) and elementary school-age children (ages 6 to 14). The bottom portion of the table presents the percentage of children who are themselves foreign born, those who have an immigrant parent, and separately those native-born children who have an immigrant parent.

**Exhibit A.1.** Nativity of Children and Their Parents, 2015

	All Children	One or More Foreign-Born Parents	Both Native Parents
<b>Children Under Age 6</b>			
Child is foreign-born	350,326	326,446	23,880
Child is native-born	22,513,379	5,433,376	17,080,003
<b>Children Ages 6 to 17</b>			
Child is foreign-born	1,951,711	1,766,964	184,747
Child is native-born	45,128,968	10,338,903	34,790,065
<b>Percent of Children Who Are Foreign Born</b>			
Ages under 6	1.53		
Ages 6 to 17	4.15		
All ages under 18	3.29		
<b>Percent of Native-Born Children Who Have an Immigrant Parent</b>			
Ages under 6	24.13		
Ages 6 to 17	22.91		
All ages under 18	23.32		
<b>Percent of all Children Who Have an Immigrant Parent</b>			
Ages under 6	25.19		
Ages 6 to 17	25.71		
All ages under 18	25.54		

*Source: American Community Survey, 2015: B05009*

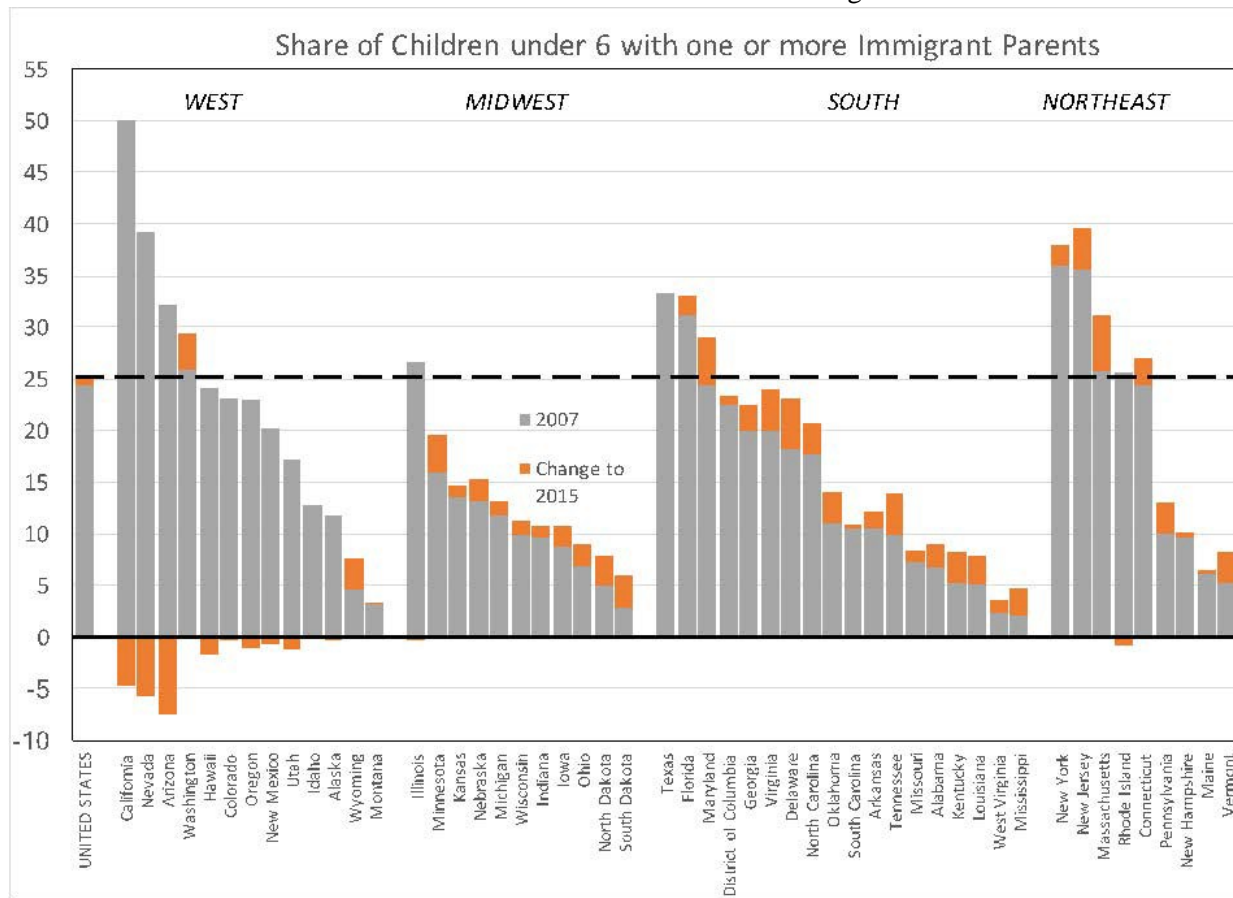
The presence of immigrants is very uneven across the United States, and so it is useful to compare the 50 states on the share of children with immigrant parents. We construct the figure below with the percentage in 2015 of children under age 6 who have an immigrant parent (Exhibit A2).

The U.S. figure is shown to the left side of the figure, with the U.S. level represented by a dashed line running across the figure. Separate bars record each state's immigrant parent percentage, grouping states into the four census regions, ordered west-to-east. Also superimposed is the

change in the percentage since 2007. For example, Maryland stands out as the third highest in the South, with 29.1 percent of its children having immigrant parents, and this figure is 4.7 percentage points higher than it was in 2007. In contrast, Texas is highest in the South, with 33.0 percent with immigrant parents, but there is no change from its level in 2007. In the West, California is highest, with 45.4 percent of children with immigrant parents in 2015, but that level actually has fallen because the change indicator is negative. It shows that the share with immigrant parents is 4.7 percentage points lower than it was in 2007, when fully half of all children in California were born to immigrant parents. In general, the states with rising shares of children with immigrant parents are newer destinations for immigrant settlement.

What we learn from Exhibit A2 is that in only 11 states do children exceed the national average of 25.4 percent with immigrant parents. But this group includes the very largest states—California, Texas, Florida, and New York—and they exceed the U.S. average by a lot. In contrast, 26 states have less than 15 percent of their children living with immigrant parents. The Midwest generally has the lowest prevalence of immigrant parents, but there are states with very low rates in every region. Surely the presence of immigrant parents could make a sizable difference in the relative numbers of children in a state.

**Exhibit A.2.** Share of Children Under 6 who have One or More Immigrant Parents



Source: 2007, 2015 American Community Survey 1-Year Estimates, C05009, B05009

## **Appendix B**

### Index of Children's Societal Importance for the 50 States

The Index of Children's Societal Importance described in the text can be replicated for all 50 states. The challenge is in locating population projections by age for all states. The Census Bureau has not conducted state projections since 2005 and instead refers website searchers to the individual states. Unfortunately, most states do not have projections publically available, or their projections are too short range, extending only to 2025 or 2030. The only organization that supplies age projections for all 50 states is the Demographics Research Group of the Weldon Cooper Center for Public Service at the University of Virginia. Their projections were last updated in May 2016.<sup>34</sup> Unfortunately these projections extend only to 2040, and they also are conducted by a simplified method that works with the limited data often available for smaller states. Accordingly, we extended the trends observed for each state by the national rate of change estimated by the Census Bureau. In addition, two of the largest states, California and Texas, produce their own high-quality projections and those data were used in place of the Weldon Cooper estimates.

How to communicate so much information for all 50 states is a challenge, but we have adopted a compressed method that shows each state's changes in a single bar. The method is graphically represented in Exhibit B1, showing how the increments of change between each period can be stacked in a single, color coded bar for each state. It is demonstrated with the national data in Exhibit B1 and then displayed for the nation and all the states in west-to-east format, with states ranked within regions, in Exhibit B2.

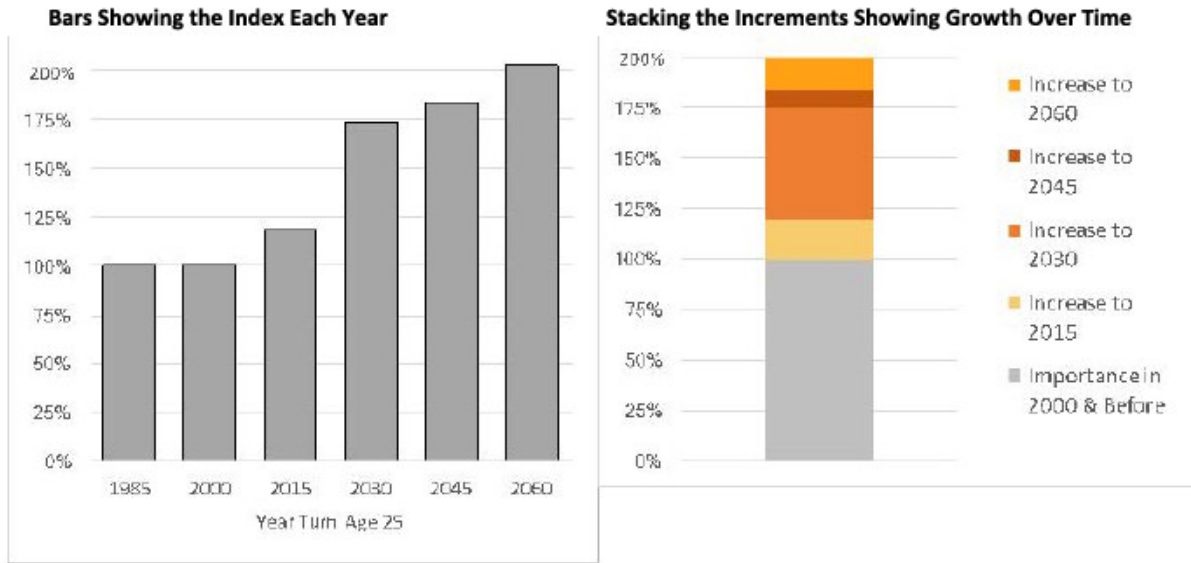
Children's importance is growing everywhere in the nation. The state calculations extend only to 2045, when the children born in 2020 will reach age 25. (This limitation for states is due to the lack of long projections data for states.) At that time the Index is greater than 150% in all but three states, Nevada, Utah, and Alaska, all in the west. Even in these states children's importance has grown markedly from their unusually low index values due to their young population in 2000.

The increasing importance of children is so widespread that there are no distinctions between the coasts and the heartland states or between the so-called blue and red states. This commonality of experience and needs lays the basis for potential broad national consensus about providing needed resources for children's development.

---

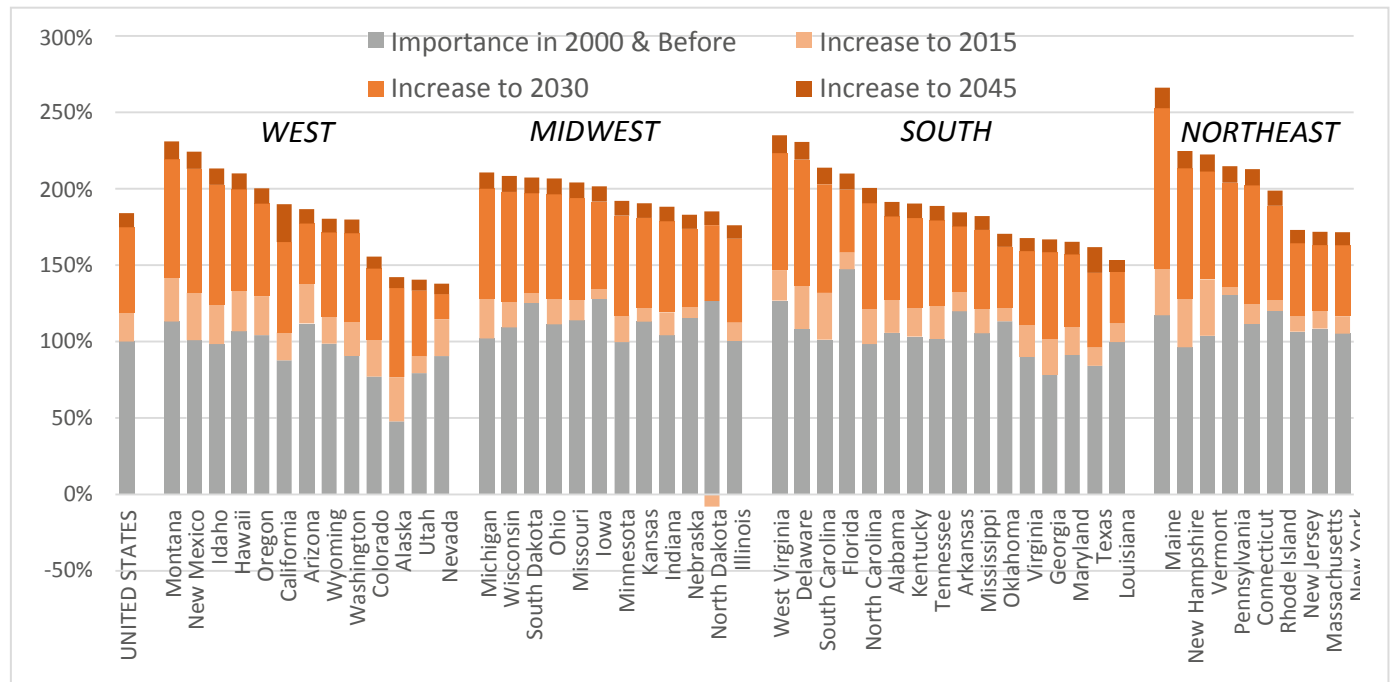
<sup>34</sup> [www.coopercenter.org/demographics](http://www.coopercenter.org/demographics)

**Exhibit B1.** Expressing the Index as a Single Bar Showing Increasing Importance Over Time



Source: Author calculation from Exhibit 11

**Exhibit B2.** Societal Importance of Children Turning 25 in 2000, 2015, 2030, and 2045, Relative to the National Average in 2000



Source: Author calculation from Census Bureau, state projection data from Demographics Research Group of the Weldon Center for Public Service at the University of Virginia, and procedures in Exhibit 11

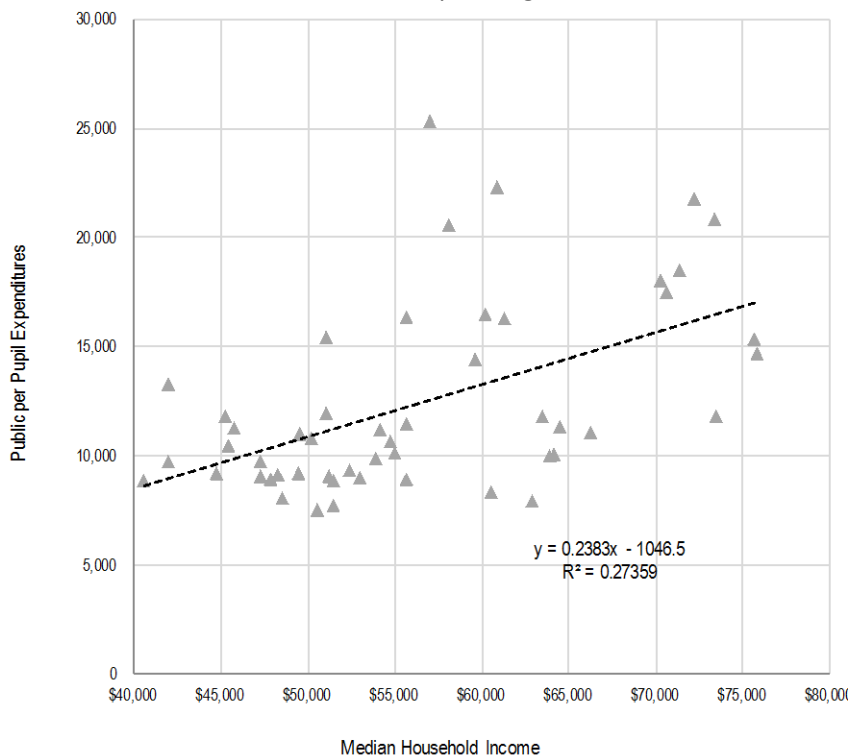
## Appendix C State Spending on Children: More Details

### Spending Relative to Median Household Income

States can first be compared based on their median household income. Since most local school district funding is tied to state and local taxes, a state’s median income is a partial determinant of how much a state’s taxpayers can afford to invest towards K-12 education. Exhibit C1 shows the relationship between these two factors, and it also reveals the underlying broad disparities in level of educational investment and in median incomes for different states.

Each dot represents one state, with its horizontal position (x-axis) indicating the state’s median household income in 2015 and the vertical position (Y-axis) indicating how high is its average K-12 spending per pupil. Although a broad scatter of states is displayed, the central tendency is upward trending, with spending rising as average state incomes are higher, as expected. With every \$1000 increase in median income, states spend an average of \$238 more per pupil. We can use this formula to form an expectation of the level of per pupil expenditures a state should be funding given its median household income. Of course many other factors enter in these budget decisions, and this method only accounts for the factor of median household income.

**Exhibit C1.** State Public Education Spending vs. Median Household Income



*Source:* Author calculation from 2016 National Education Association Rankings & Estimates, Highlights Table 2, and American Community Survey 2015, Social Explorer Tables, T57 Median Household Income

States that lie above the trend line are spending more per pupil than would have been expected based on the income level of the median household in the state. In contrast, states that fall below the trend line are falling short of our expectations based on income alone. We calculate these “residuals” as the actual spending value minus the predicted value (which would be on the trend line). A positive residual indicates higher than expected spending and a negative one indicates a lower than expected amount of spending. Sometimes this is also described as over and under “performance,” or as greater or less “effort.” Exhibit C2 displays the actual spending for each state, together with the residual from the regression that is overlaid to show the magnitude of its over or under performance.

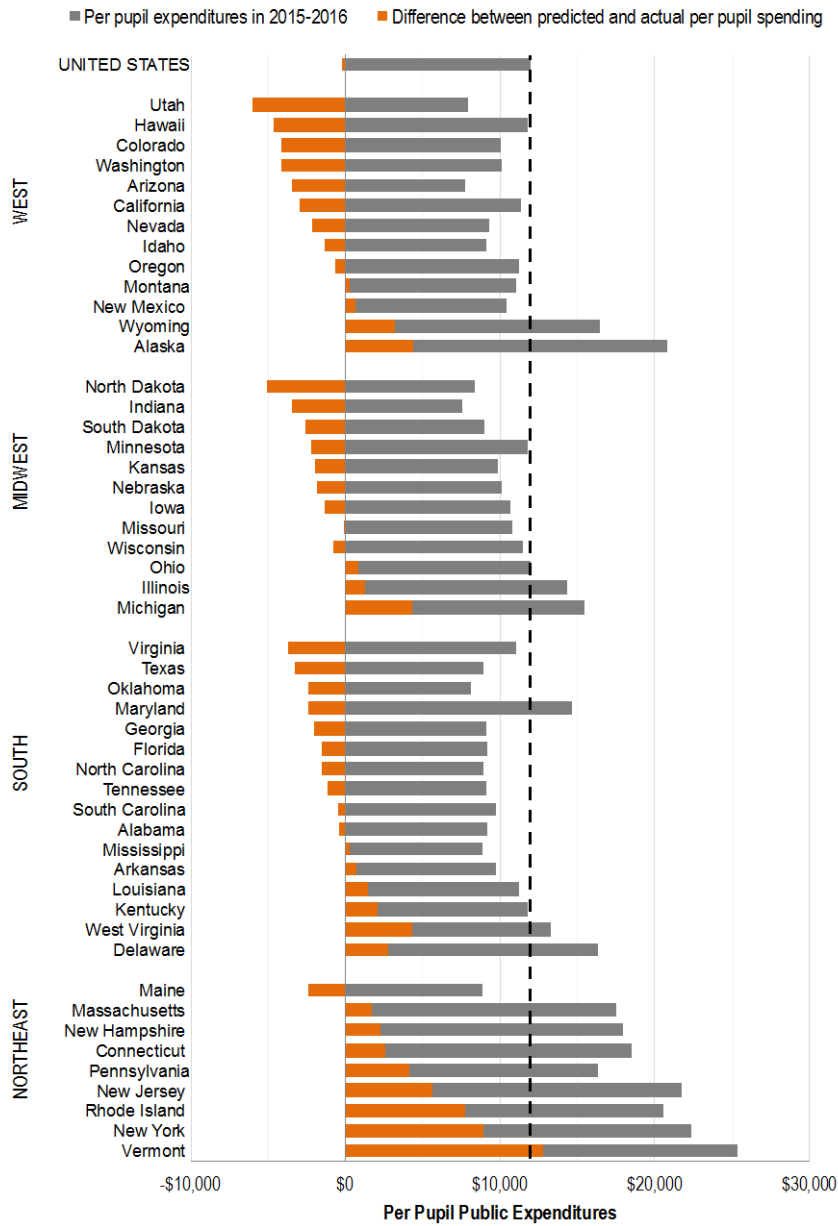
A parallel calculation was carried out using Medicaid spending on children and the median household income of each state. However, due to the heavy federal contributions and uneven political responses to the federal incentives, there is effectively very little correlation with median household incomes in the states (see main text).

These spending differences also can be used to highlight the disparities in educational or health investment among different states. In the United States, an average student receives state funding ranging from a low of \$7538 in Indiana to a high of \$25,286 in Vermont. What is problematic is the fact that growth in children may be concentrated in states with the poorest outcomes for children, such as in the southwest region of the U.S.<sup>35</sup> This is examined closely in Section VI of the main text and also in the next section below of Appendix C.

---

<sup>35</sup> Murdock, S. H., Cline, M., and Zey, M. (2012). *The Children of the Southwest: Demographic and Socioeconomic Characteristics Impacting the Future of the Southwest and the United States*. Retrieved from <http://firstfocus.org/resources/report/children-southwest/>

**Exhibit C2. Actual Minus Predicted Per Pupil Expenditures by State, 2015-2016**



Sources: See Exhibit C1

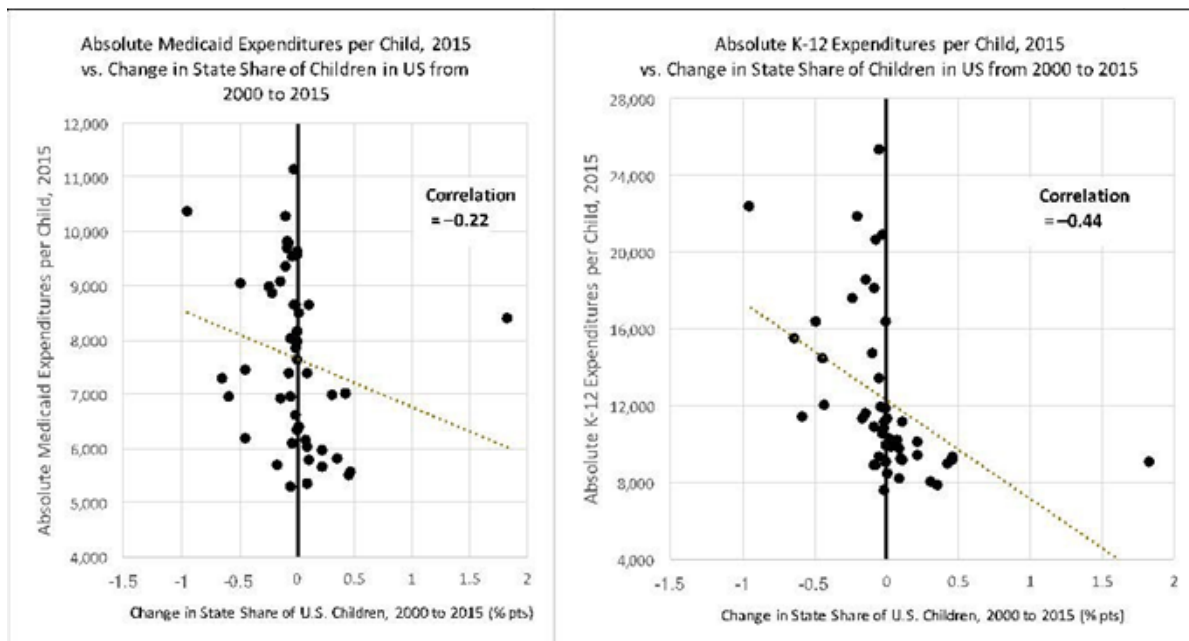


## Spending Relative to Growing or Shrinking Attraction of the Nation’s Children

As discussed in the text, the states that are spending more per child are not the states whose growth in children is exceeding the low national rate of growth. This is demonstrated through the use of scatterplots in Exhibit C3, where we examine the growing or shrinking share that each state accounts for of the nation’s children. The left panel shows the relationship of states’ growing children share to the levels of K-12 education spending offered by each state, and the right panel shows the relationship to Medicaid spending.

Very different patterns appear of resource provision when related to the growing concentration of the nation’s children in a few large, growing states. The outlier visible to the right of each plot is Texas, which increased its share of the nation’s children by 1.84 percentage points from 2000 to 2015. In regards to education spending, a sizable negative correlation indicates that states capturing more of the growth in children also offer lower spending per student. On the other hand, in regards to Medicaid spending, there is essentially zero correlation with growing concentrations of children. As discussed elsewhere in the text, the federal involvement with subsidy incentives serves to protect the nation’s health investment in children, no matter what state their parents might take them to.

**Exhibit C3.** Comparison of State Expenditures on Children, Ages 5 to 14, (Medicaid and K-12) with the Changes (2000 to 2015) in States’ Share of the Nation’s Children



Source: Author calculation from Census Bureau 2000 p012, 2015 PEPASR6H, and 2016 (for 2015); National Education Association Rankings & Estimates; and Kaiser Family Foundation tables on children’s Medicaid enrollment and spending by states.

## Appendix D

### The Long Duration of Returns to Childhood Investments: Long-Lasting and Cumulative Benefits Across a Variety of Programs

A Review of the Literature Conducted by  
Gwyn Pauley, PhD

#### Introduction

Evidence has found that investing in children can be quite productive. Many programs have been found to have a benefit to cost ratio above one, implying that the benefits that accrue are greater than the costs to implement the program. In fact, it may be more productive to invest in children than adults. One explanation is that children may be more malleable than adults, and investments may be more productive because of this.<sup>36</sup> Another reason that investing in children can be productive is that investments made in children have a lifetime to manifest themselves.<sup>36</sup> For example, consider investments made in childhood health. Immediate benefits such as improved health or test scores are possible. However, this improved health may continue throughout the life course. In addition, because the individual is healthier, they may complete more education. Still later in life, this increase in education due to childhood investments in health would translate to an increase in earnings and taxes paid.

This highlights two challenges in estimating the return to investments made in children. The first being that it is important to account for the possibility of a lifetime effect. The second being that there is a wide range of both inputs and possible returns. The science is still evolving on how best to address these challenges.

To get a total measure of returns, the child would ideally be observed throughout the course of their life. However, this is difficult for a variety of reasons, including the expense of following individuals for an extended period of time. As a result, very few studies exist that began 30 years ago and now provide evidence on the grown children. Further, even if we actually had such an ideal study, it is often difficult to monetize improvements in outcomes such as completed education or improved health. To overcome the challenge of estimating returns to investments in children across the lifecycle, researchers have commonly estimated returns at a point in time. For example, investments in health may have contemporaneous effects such as improved biomarkers or other self-reported measures of health that are estimated. Others have used long panels to study children throughout the lifecycle. Finally, one other method to overcome the difficulty of observing each outcome is to forecast outcomes.

Measuring the returns to investments made in children is difficult for a variety of reasons. First, it is not clear how to best measure returns on investments, or even the underlying investments themselves. Investments may include spending on education, health care provision, income or

---

<sup>36</sup> Heckman, J. and D. Masterov. (2007) "The Productivity Argument for Investing in Young Children." *Applied Economic Perspectives and Policy*. 29 (3): 446-493.

cash transfers, or transfers in-kind, such as Medicaid. While it is easy to measure the cost of a program, it is often difficult to put a monetary value on these types of returns. Returns may come in many forms and can include completed education, better health, higher earnings later in life, more taxes paid, or even a reduction in crime. Although some studies attach a dollar value to these, it is common just to report changes in outcomes without monetizing them. While each of these specific returns is important individually, each component contributes part of the total return. It is also important to note that returns may accrue to a variety of beneficiaries, including the child, the parents of the child, the government that funded a program, the economy at large, or society as a whole. Often these total returns are not readily divisible by type of beneficiary.

One last difficulty to highlight is that investments may be confounded with other inputs of child development. For example, children from high-income families might complete more education. Naïve estimates suggest that higher income leads to more education. However, the reason for completing more education is not necessarily that they were in high-income families. The children may complete more education because they are higher ability. At the same time, the family may have high income because the parents are also of high ability. Ideally, investments would be randomly assigned in experiments to assess their effects, but this is often not possible or ethical. Thus, researchers must come up with clever ways to measure how investments affect children independent of such background factors. Besides random assignment, researchers have compared children who were otherwise similar but were not eligible for investments such as spending on education, income, or public health insurance.

Given the difficulties of estimating the returns to investments made in children noted above, it is important to note that our understanding of critical development that occurs during childhood is evolving rapidly. Evidence from psychology, neuroscience, and economics contributes to this understanding. The most up to date economic evidence suggests that investments in children have a positive return. The rest of this brief will focus on different types of investments, such as education or health, that can be made in children and their returns.

### **Education Program Effects**

Conceptually, one of the easiest investments to think about is education. Educational investments may improve education outcomes for children. This could have lasting effects on the child, including an increase in earnings, spending that stimulates the economy, and taxes paid. Although some previous literature had concluded that school spending did not actually improve student outcomes, more recent work has concluded that indeed, spending has a lasting effect on students.<sup>37</sup> For example, ten years after reforms to state educational funding, aimed at achieving sufficient funding for low-income school districts, researchers found the baseline gap in test scores between high-income and low-income school districts decreased by

---

<sup>37</sup> Hanushek, E. (2003). "The Failure of Input-based Schooling Policies." *The Economic Journal*. 113 (485): F64-F98.

about 20%.<sup>38</sup> A back of the envelope calculation implies that the increase in earnings resulting from this increase in test scores for students from low-income schools has a benefit-cost ratio of at least 1.5. Additionally, studies suggest that these school reforms had lasting effects on economic outcomes.<sup>39</sup> For example, a 10% increase in per pupil spending for all 12 years of public school is associated with .31 more completed years of schooling, 7% higher wages during adulthood, and a 3.2 percentage point reduction in the annual incidence of adult poverty. For low-income children the effect was substantially larger: .46 extra years of schooling, 9.6% higher wages, and 6.1 percentage point decrease in adult poverty.

Recent work has suggested that early childhood is a particularly important time for development.<sup>40</sup> Further, investments made early have more time to accrue benefits.<sup>1</sup> For these reasons, preschool might be especially important for individuals. As an example, investments made in children through public preschool programs, such as Head Start, have been shown to have lasting effects. For example, when Head Start was implemented, the 300 poorest counties in the US were provided technical assistance to develop funding proposals. When comparing these counties to others that were similar but just above the cut off for assistance in a regression discontinuity framework, it has been shown that mortality fell for causes that could have been affected by services offered by Head Start.<sup>41</sup> This gain was so large that it eliminated excessive risk of these types of deaths. This same study found that rates of high school completion also increased. Another study, which compares siblings who went to Head Start and those that went to other preschool programs or no preschool at all, found that white children who attended Head Start had higher test scores and were significantly less likely to repeat a grade relative to no preschool.<sup>42</sup> In a similar study, whites who attended Head Start were found to have higher rates of high school completion, college attendance, and earnings and blacks were found to be less likely to have been charged with a crime.<sup>43</sup> Importantly, these findings were concentrated among children whose mother did not complete high school. It has been hypothesized that the effects were different for whites and blacks due to the lower quality follow-up school environment that black children are more likely to experience.<sup>44</sup>

Additionally, “model preschool programs” have also been studied. These are similar to Head Start, but provide more a more thorough set of benefits. The costs of these programs are substantially higher than Head Start, but many researchers have found that there are high

---

<sup>38</sup> Lafortune, J. et al. (2016). “School Finance Reform and the Distribution of Student Achievement” NBER working paper 22011. Retrieved from <http://www.nber.org/papers/w22011>.

<sup>39</sup> Jackson, C.K. et al. (2016) “The Effects of School Spending on Educational and Economic Outcomes: Evidence from School Finance Reform.” *Quarterly Journal of Economics*. 131 (1): 157-218.

<sup>40</sup> Currie, J. and D. Almond. (2011) “Human Capital Development Before Age 5.” *Handbook of Labor Economics*. 4 (B) 1315-1486.

<sup>41</sup> Ludwig, J. and D.L. Miller. (2007) “Does Head Start Improve Children’s Life Chances? Evidence from a Regression Discontinuity Design.” *Quarterly Journal of Economics*. 122 (1): 159-208.

<sup>42</sup> Currie, J. and D. Thomas. (1995) “Does Head Start Make a Difference?” *American Economic Review*. 85 (3): 341-364.

<sup>43</sup> Garces, E. et al. (2002) “Longer-Term Effects of Head Start.” *American Economic Review*. 92 (4): 999-1012.

<sup>44</sup> Currie, J. and D. Thomas (2000) “School Quality and the Longer-Term Effects of Head Start.” *Journal of Human Resources*. 35 (4): 755-774.

returns to these model programs. For example, the HighScope/Perry Preschool Program provided high quality preschool education to at risk African Americans in Ypsilanti, Michigan.<sup>45</sup> Children were randomly assigned to treatment. Importantly, children were followed through adolescence and early adulthood to age 40. Although there are several studies categorizing the effects of participation in the program, the seminal study found returns above the historical returns on equity.<sup>46 47</sup> Specifically, the rate of return to society was estimated to be between 7-10%. This implies that for each dollar invested, between 7 and 12 would be returned to society.<sup>47</sup> This return includes the costs and benefits of increased educational attainment, criminal activity, earnings, tax payments, and welfare receipt. It is also important to note that these estimates do not include health or well-being and thus may be a lower bound.

Other influential early education programs are the Carolina Abecedarian Project (ABC) and the Carolina Approach to Responsive Education (CARE).<sup>48</sup> A recent study finds that these programs also had high returns, but that they differ by gender of the child.<sup>49</sup> Specifically, while the overall benefit/cost ratio was estimated to be a statistically significant 7.3, a statistically significant benefit/cost ratio of about 11.1 was found for men, while a ratio of 2.45 was found for women. These returns are higher than previous findings, because they include health measures and project outcomes across the entire life cycle. Overall, this suggests a rate of return of 13.7% per annum. The study also shows that no one component of returns (increased labor income of the child later in life, increased parental income when the child is in preschool and later in life, reduction of crime, and improved health throughout the entire lifespan) is driving their findings.

Lastly, the Chicago Child-Parent Centers (CPC) is also considered a model preschool program.<sup>50</sup> The CPC is still ongoing but was not randomly assigned. However, researchers have compared children in the CPC to similar children who did not participate at different ages and found a positive return on investments. For example, estimates at age 21 suggest a return to society of about \$7 per \$1 invested in the preschool program and \$6 per \$1 invested in the extended program.<sup>51</sup> However, at age 26, these same returns were estimated to be about \$11 and \$8,

---

<sup>45</sup> The Perry Preschool Program included half-day preschool at ages 3 and 4 taught by certified teachers with at least a bachelor's degree. Active learning was emphasized. In addition, 90 minute weekly home visits occurred.

<sup>46</sup> See Karoly, L. (2016) "The Economic Returns to Early Childhood Education." *The Future of Children*. Fall: 37-55. for a review.

<sup>47</sup> Heckman, J., et al. (2010). "The Rate of Return of the HighScope Perry Preschool Program." *Journal of Public Economics*. 94: 114-128.

<sup>48</sup> Benefits of both CARE and ABC included full-time day care for 50 weeks/year, stimulation, medical care, nutrition, and social services. In addition, there was low staff to child ratios from ages 0-5. CARE also included between 1-3 60 minute home visits per month. From ages 5-8, parent-teacher meetings also occurred.

<sup>49</sup> García, J., et al. (2016) "The Life-Cycle Benefits of an Influential Early Childhood Program." NBER Working Paper 22993. Retrieved from <http://www.nber.org/papers/w22993.pdf>.

<sup>50</sup> CPC includes a daily programming, a 9 month school year with a 6 week summer program. Benefits of the CPC included low student-to-teacher ratios, an intensive parent program, health and nutrition services, and outreach activities. Kindergarten and school age activities were also provided.

<sup>51</sup> Reynolds, A., et al. (2002). "Age 21 Cost-Benefit Analysis of the Title I Chicago Child-Parent Centers." *Educational Evaluation and Policy Analysis*. 24 (4): 267-303.

respectively.<sup>52</sup> While this is still a return above equity, it also highlights the need to consider returns across the entire life course when evaluating programs.

### **Income Effects**

The income-health/education gradient is well known in economics, namely that people of increasingly higher income backgrounds enjoy greater health and educational attainment.<sup>53</sup> Income is important because it can essentially be spent freely by the family, including on health care, food, or other forms of consumption. However, evidence of causality between family income and child outcomes is more difficult to estimate. Despite this, several studies also show that family income has a direct effect on a child's educational achievement, as measured through test scores, and that the greatest gains are made for investments in children from the most impoverished families.<sup>54</sup> Income transfer programs have also been shown to be important for child development. For example the Mothers' Pension Program, the first government sponsored welfare program for mothers with dependent children, was found to increase longevity by about 1 year for boys who received the cash transfer during childhood. However, for the neediest children, this gain was even larger, almost 1.5 years.<sup>55</sup> This gain in longevity can be explained by a decrease in the likelihood of being underweight and increases in educational attainment and early adult earning.

### **Transfers-in-kind**

Similar to income transfers to the family, access to food stamps has also been shown to have effects on children. For example, one study that used the rollout of food stamps to measure the long-run effects found that increasing access to food stamps for the family from "not at all" to "available" between the ages of 0 and 5 decreased metabolic syndromes by about 1/3 of a standard deviation.<sup>56</sup> Further, economic self-sufficiency also improved for women. Additionally, these findings were concentrated on individuals who grew up in the poorest counties in the US.

Other food programs have also been shown to be important for children. For example, the availability of the school breakfast program was found to increase test scores in both math and reading. This increase was also found to be higher for low-income students, male students, and

---

<sup>52</sup> Reynolds, A., et al. (2011). "Age 26 Cost-Benefit Analysis of the Child-Parent-Center Early Education Program." *Child Development*. 82 (1): 379-404.

<sup>53</sup> Case, A., et al. (2002). "Economic Status and Health in Childhood: The Origins of the Gradient." *American Economic Review*. 92 (5): 1308-1334.

<sup>54</sup> Dahl, G. B.; Lochner, L. (2012). "The Impact of Family Income on Child Achievement: Evidence from the Earned Income Tax Credit." *American Economic Review*. 102 (5): 1927–1956.

<sup>55</sup> Aizer, A. et al. (2016). "The Long Run Impact of Cash Transfer to Poor Families." *American Economic Review*. 106 (4): 935-971.

<sup>56</sup> Hoynes, H. et al. (2016) "Long-Run Impacts of Childhood Access to the Safety Net." *American Economic Review*. 106(4): 903-934.

students with large families, all of whom are more likely to consume the breakfast.<sup>57</sup> In addition, the school lunch program was found to have possibly long term effects on the number of years of completed education, but no effect on adult health measures.<sup>58</sup>

### **Medicaid and Health Programs: Effects on Health**

Other in-kind transfers also have important effects on children. For example, Medicaid and the Children's Health Insurance Program (CHIP), public health insurance programs available to low-income and disabled individuals, have also been found to be particularly important investments in children. One series of seminal papers found that Medicaid expansions caused infant mortality to fall by 8.5% between 1979 and 1992 and child mortality to fall by 5.1% between 1984 and 1992.<sup>59 60</sup> One later study compared Massachusetts, which extended public health insurance, to surrounding states that did not and found about a 10% increase in the likelihood that child's health was reported as being excellent.<sup>61</sup> However, other studies that used the Medicaid expansions of the 1980s and 1990s as variation found that there was little or no effect on child self-reported health.<sup>62 63</sup> Other papers have studied different measures of health such as hospitalizations and found inconclusive evidence. One study compared low-income children, eligible for Medicaid expansions, to high-income children across different states and found a reduction in ambulatory care for young children (ages 2-6).<sup>64</sup> However, other work has found that Medicaid eligibility was actually associated with an increase in hospitalizations.<sup>65</sup>

More recently, studies have considered the long-run health effects of access to health insurance during childhood. For example, one study found that having access to Medicaid during childhood reduced the four-year mortality rate due to internal causes that might be preventable due to access to health care. This effect was larger for blacks than for whites.<sup>66</sup> One similar study used taxpayer records and found that mortality at age 28 fell by about 5.3%

---

<sup>57</sup> Frisvold, D. (2015). "Nutrition and Cognitive Achievement: An Evaluation of the School Breakfast Program." *Journal of Public Economics*. 124 91-104.

<sup>58</sup> Hinrichs, P. (2010). "The Effects of the National School Lunch Program on Education and Health." *Journal of Policy Analysis and Management*. 29 (3): 479-505.

<sup>59</sup> Currie, C.; Gruber, J. (1996) "Saving Babies: The Efficacy and Cost of Recent Changes in the Medicaid Eligibility of Pregnant Women." *Journal of Political Economy*. 104 (6): 1263-1296.

<sup>60</sup> Currie, C.; Gruber, J. (1996) "Health Insurance Eligibility, Utilization of Medical Care, and Child Health." *Quarterly Journal of Economics*. 111 (2): 431-466.

<sup>61</sup> Miller, S. (2012). "The Impact of the Massachusetts Health Care Reform on Health Care Use Among Children." *American Economic Review: Papers and Proceedings*. 102 (3): 502-507.

<sup>62</sup> De La Mata (2012). "The Effect of Medicaid Eligibility of Coverage, Utilization, and Children's Health." *Health Economics*. 21 (9): 1061-1079.

<sup>63</sup> Currie, J., et al. (2008) "Has Public Health Insurance for Older Children Reduced Disparities in Access to Care and Health Outcomes?" *Journal of Health Economics*. 27 (6): 1567-1581.

<sup>64</sup> Kaestner, R., et al. (2001). "Medicaid Eligibility and the Incidence of Ambulatory Care Sensitive Hospitalizations for Children." *Social Science and Medicine*. 52 (2): 305-313.

<sup>65</sup> Dafny, L., Gruber, J. (2005). "Public Insurance and Child Hospitalizations: Access and Efficiency Effects." *Journal of Public Economics*. 89 (1): 109-129.

<sup>66</sup> Wherry, L. and Meyer, B. (2016). "Saving Teens: Using a Policy Discontinuity to Estimate the Effects of Medicaid Eligibility." *Journal of Human Resources*. 51 (3): 556-588.

for each additional four-year increase in childhood Medicaid eligibility.<sup>67</sup> Self-reported health has also been studied as an outcome of interest. While there is some evidence that health insurance during childhood improves self-reported health, there is inconclusive evidence as to when being insured matters.<sup>68 63</sup>

Research has also attempted to find concrete lasting improvements in health due to childhood health insurance. For example, prenatal health insurance has been found to cause a reduction in hospitalizations related to endocrine, nutritional and metabolic diseases, and immunity disorders between the ages of 19 and 35. In addition, Medicaid eligibility between the ages of 1 and 4 caused a reduction in non-pregnancy hospitalizations and eligibility between the ages of 5 and 9 caused a reduction in the probability of reporting at least one chronic condition in adulthood.<sup>68</sup> Further, another study used the roll-out of Medicaid to compare those exposed to the program during childhood to those born before Medicaid began and found that Medicaid caused an improvement in adult chronic conditions, including hypertension.<sup>69</sup> In addition to improved physical health, expansions to Medicaid coverage have been shown to improve adult oral health for the non-Hispanic black population.<sup>70</sup>

### **Medicaid and Health Programs: Effects on Economic Outcomes**

Some researchers have also studied how health insurance during childhood affects economic outcomes later in life. The most convincing study to date uses IRS tax records to study how access to Medicaid during childhood affected individuals in early adulthood. This study finds that each additional year of eligibility from birth to age 18 increased cumulative (up to age 28) tax payments by about \$250. Further, earnings were also statistically higher for women and there was a decrease in both the probability of receiving the Earned Income Tax Credit (EITC) and the amount of EITC receipt for women. This same study estimates that about 56 cents of every dollar spent on childhood Medicaid is recouped by the federal government through tax payments by the time the covered children turn 60.<sup>67</sup> A similar study, using survey data, also found that prenatal eligibility increased personal income and decreased the probability of SNAP (food stamp) participation.<sup>68</sup> Another study used the roll-out of Medicaid between 1966 and 1970 to study long-run effects on labor supply and disability and found that health insurance during childhood improved both of these outcomes.<sup>71</sup> While both non-white and white individuals experienced a substantial decrease in self-reported disability, white individuals were

---

<sup>67</sup> Brown, DW., et al. (2015). "Medicaid as an Investment in Children: What is the Long-Term Impact on Tax Receipts?" NBER Working Paper 20835. Retrieved from <http://www.nber.org/papers/w20835>.

<sup>68</sup> Miller, S., Wherry, L. (2016). "The Long-Term Effects of Early Life Medicaid Coverage." Retrieved from [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2466691](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2466691).

<sup>69</sup> Boudreaux, M., et al. (2016). "The Long-Term Impacts of Medicaid Exposure in Early Childhood: Evidence from the Program's Origin." *Journal of Health Economics* 45: 161-175.

<sup>70</sup> Lipton, B., et al. (2016) "Previous Medicaid Expansion May Have Had Lasting Positive Effects on Oral Health of Non Hispanic Black Children." *Health Affairs*. 35 (12): 2249-2258.

<sup>71</sup> Goodman-Bacon, Andrew. (2016). "The Long-run Effects of Childhood Insurance Coverage: Medicaid Implementation, Adult Health, and Labor Market Outcomes." NBER Working Paper 22899. Retrieved from <http://www.nber.org/papers/w22899>



less likely to receive public assistance or disability insurance and were more likely to be in the labor force later in life. Importantly, this study finds that even after discounting costs to present dollars, between 2000-2014, the government recouped over 100% of the cost of the program between the years 1966-1993. A more conservative method of discounting costs suggests an annual rate of return between 1.6 and 2.6%. By observing individuals a full 50 years after the introduction of Medicaid, this study advances our understanding of the lasting effects of health insurance during childhood.

Explaining why there is a lasting improvement in outcomes for children who were covered by Medicaid is somewhat difficult. One hypothesis is that improved health causes students to miss less school and thus see improved educational outcomes. One study shows evidence of this for Hispanic children. Specifically, increases in Medicaid eligibility were found to cause a reduction in bed days and days of restricted activity.<sup>72</sup>

Another explanation for the lasting effects of access to health insurance is that health is complementary in producing skills (both cognitive and non-cognitive).<sup>73</sup> For example, healthier children may have an easier time paying attention in class. There have been several studies that find evidence of this mechanism. For example, researchers found that Medicaid eligibility at birth was associated with improved reading test scores.<sup>74</sup> More recently, researchers have examined completed education and found that Medicaid eligibility during childhood improved both rates of high school and college graduation.<sup>75</sup> However, there is some evidence that this improved educational attainment is concentrated among women and that Medicaid eligibility during childhood did not statistically improve outcomes for men.<sup>67</sup>

## Conclusion

To summarize, investments in children can take many forms, including access to health care, education, or even transfers of income. Returns are often difficult to measure or monetize and can occur through the course of a child's life. Further, these returns can accrue to the individual child, their parents, or society as a whole. Recent evidence has suggested that spending on education does improve outcomes for low-income children and that investments made in preschool aged children may have returns that are well above equity. Income transfers as well as in-kind transfers, including food stamps and school nutrition programs, have also been shown to have lasting effects. However, there is little work quantifying a benefit/cost ratio for these kinds of programs. In addition, Medicaid, another in-kind transfer, has been shown to have both immediate and longer lasting effects on both health and economic outcomes. Contemporaneous improvements in both health and days of limited activity

---

<sup>72</sup> Lykens, K. and Jargowsky, P. (2002). "Medicaid Matters: Children's Health and Medicaid Eligibility Expansions." *Journal of Policy Analysis and Management*. 21 (2): 219-238.

<sup>73</sup> Heckman, J. (2007). "The Economics, Technology, and Neuroscience of Human Capability Formation." *Proceedings of the National Academy of Sciences*. 104 (33): 13250-13255.

<sup>74</sup> Levine, P. and Schanzenbach, D. (2009). "The Impact of Children's Public Health Insurance Expansions and Educational Outcomes." *Forum for Health Economics and Policy*. 21 (1): 1-26.

<sup>75</sup> Cohodes, S., et al. (2016). "The Effect of Child Health Insurance Access on Schooling: Evidence from Public Insurance Expansions." *Journal of Human Resources*. 51 (3): 556-588

because of access to public health insurance have been found. While few studies have attempted to quantify the returns to Medicaid, the most credible one found that 60% of investments were returned to the federal government in the form of higher tax payments. This is likely an underestimate because it does not include returns such as improved health or educational attainment.

The science and methods used to estimate returns to early childhood investments are ever evolving. As new data and techniques becomes available, our understanding will continue to expand. Recent work has shown that the timing of investments is important. Investments made earlier in life have more time to accrue benefits. Further, the entire lifecycle is important. For example, findings on important outcomes such as crime or teen pregnancy cannot be observed at early ages. Outcomes such as lifetime earnings or health at older ages can be predicted, but should be counted towards benefits, even though they do not occur until much later in the lifecycle. However, with recent studies, evidence is becoming stronger and clearer that we must continue to invest in children.