Early Care and Education is a vital industry
There are more than 6,500 licensed early care and education (ECE) businesses in North Carolina, most with fewer than 20 employees.

That employs thousands,
39,909 North Carolinians are employed in home visiting, early intervention, child care, or pre-K.

Leverages federal funds,
ECE draws $820 million in federal grant funds into North Carolina every year.

And generates economic activity that ripples throughout the state economy
ECE directly generates $1.9 billion in economic activity each year and supports an additional $1.6 billion in economic activity and 12,225 jobs in other industries.

Returning tax revenue to state and local governments,
The economic activity produced or catalyzed by the ECE businesses and institutions generates $135 million in state and local tax revenue each year.

Making it possible for thousands more to work, go to school,
There are 278,717 working mothers with children under six in North Carolina. Many of these women would not be in the labor force if paid child care were not available.

And contribute to the state economy.
North Carolina women who depend on paid child care in order to remain employed earn over $1.8 billion each year.

Early care and education strengthens tomorrow’s workforce,
Over 200,000 North Carolina children five and under receive state-licensed child care and/or pre-K services. High quality ECE improves their chances of success in school and life.

Reducing public sector costs today...
High quality ECE has been shown to reduce the need for costly educational interventions including special education and grade repetition and decrease the incidence of behaviors, such as dropping out of high school, substance abuse, and juvenile crime that impose high costs on the public sector.

...And in the future
High quality ECE increases educational attainment and lifetime earnings while decreasing the likelihood of incarceration, welfare dependency, and other socially costly outcomes in adulthood.

(by)
Kelly O’Donnell
O’Donnell Economics and Strategy

Institute for Child Success
(introduction) The availability of child care is of vital importance to the US economy. Over the last two decades, however, child care has come to be recognized as more than just a support for working parents and the care and education of young children has come to mean more than just child care. We now know that high quality early care and education (ECE) helps prepare children, particularly those most at risk for poor educational outcomes, for success in school, careers, and the community. Because it contributes to the preparedness and productivity of tomorrow’s workforce, ECE is crucial to our country’s long-term economic health and prosperity.

Society’s perception of early care and education has also broadened. It is now understood that the most effective ECE is a continuum of services and supports, adapted to the specific needs of families and communities, that includes pre- and post-natal home visiting, screenings to identify health and developmental challenges in their earliest stages, interventions to address problems as they emerge, high quality child care for infants and toddlers and pre-K for three- and four-year-olds.

Many analyses have demonstrated the economic importance of child care and/or pre-K. The research presented here improves upon previous efforts by assessing the economic importance of North Carolina’s birth-to-five early learning continuum: home visiting, early intervention, quality child care, and pre-K. In this paper, unless otherwise noted, the term Early Childhood Education (ECE) refers to the continuum and/or any of the individual services that comprise the continuum.

(ECE impact on labor force participation and worker productivity) Labor Force Attachment Absenteeism Child Care Assistance for Low Income Working Families (ECE economic impact) Input-Output Analysis Actual Economic Benefits Far Exceed Industry Employment and Gross Receipts (long-term impacts) Home Visiting Early Intervention Child Care Pre-K (return on investment is highest for comprehensive systems of quality care) (recommendations and conclusions) (endnotes)
EARLY CHILDHOOD CARE AND EDUCATION IS AN ECONOMIC DRIVER

ECE benefits the North Carolina economy in numerous ways. The most obvious economic driver is child care because it enables parents to work, but home visiting, early intervention, and pre-K also make large contributions to the health of the state economy. Taken together, this four-program ECE continuum supports the employment of 118,989 North Carolinians: 39,909 are employed directly in ECE, 12,225 are employed as a result of the purchases ECE businesses and ECE employees make from other North Carolina businesses and another 66,892 parents are able to work due to the availability of affordable child care and pre-K.

North Carolina’s ECE industry accounts for $3.5 billion in economic productivity—$1.9 billion is generated by the industry directly, which stimulates $1.6 billion in economic activity in other sectors. The 66,892 North Carolina parents who are only able to work because paid child care is available generate an additional $1.8 billion in earnings.

ECE is a growing industry comprised of over 6,500 licensed programs that employ 39,909 workers in a broad spectrum of occupations ranging from entry level teaching assistants to nurse home visitors to program administrators and master teachers with advanced degrees. ECE draws $820 million in federal grant funds into the state each year, creating economic impacts that ripple throughout the state economy, and increasing income in virtually every sector.

Access to high quality, affordable care for their young children enables parents to work. Conversely, the inability of some parents to access dependable child care costs the North Carolina economy over $2 billion through involuntary unemployment and absenteeism. High quality ECE makes parents partners in their children’s education and connects them to resources that support the well-being and economic security of the entire family. For example, mothers who participate in early childhood home visiting programs are more likely than mothers who don’t to further their own education, presumably due to the mentoring and other support they receive from the home visitor.

Hundreds of thousands of North Carolina parents use paid child care and many are working while their child attends child care. This analysis assumes that if formal child care were not available, some parents would make other arrangements or adjust their work schedules in order to remain employed and attempts to estimate of the share of parent wages that are truly a function of child care availability. This entails estimating the number of parents who have no alternative to paid child care and would be completely unable to work were paid child care not available. That estimate is 66,892 parents. This is discussed in more detail in Section V.

Figure 1. The Birth-to-Five Early Learning Continuum

<table>
<thead>
<tr>
<th>Prenatal</th>
<th>Birth-1</th>
<th>1-2</th>
<th>2-3</th>
<th>3-4</th>
<th>4-5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Home Visiting</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Specially trained professionals or paraprofessionals regularly and frequently visit expectant parents, new parents, or primary caregivers of a child from birth to kindergarten entry to improve the health, development and well-being of both child and family by fortifying the parent-child relationship</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Child Care</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Child care services that provide a responsive, developmentally appropriate environment for young children. Key indicators of child care quality include well-trained caregivers, supportive and varied activities, high levels of parent involvement, and good health and safety.</td>
<td>Quality Child Care: What Does It Really Mean? North Carolina Cooperative Extension Service. <a href="http://www.ces.ncsu.edu/depts/fcs/pdfs/fcs460">http://www.ces.ncsu.edu/depts/fcs/pdfs/fcs460</a></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Early Intervention</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Early intervention programs identify and provide services to very young children who have, or are at risk of having, developmental problems with speech, hearing, vision, motor skills, or social-emotional skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pre-K</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Programs designed specifically to ensure kindergarten readiness and academic success through 3rd grade. Pre-K programs share 3 key characteristics: (1) high program standards, (2) serve 4-year-olds and sometimes both 3- and 4-year-olds, and (3) focus on school readiness. Colker, L. Pre-K: What Exactly Is It? Teaching Young Children Vol 2 No 1. National Association for the Education of Young Children.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
By increasing the number of children who enter the K-12 system ready to learn, ECE enhances the efficiency and effectiveness of the public schools, improving the academic odds for all children while at the same time lowering costs for taxpayers by reducing the need for remediation and special education in elementary school.

As impressive as ECE’s immediate impacts are, they are dwarfed by its long-term benefits. High quality, comprehensive ECE has been repeatedly demonstrated to produce benefits that last a lifetime. Children who have access to ECE are more likely than otherwise comparable children deprived of ECE to graduate from high school, attend college, and become productive members of the labor force and the community. They are also less likely to be impoverished, incarcerated, or welfare dependent as adults. Estimates of the long-term return on ECE investments range from $1.80 to $17 per public sector dollar invested.

(economic and demographic profile of North Carolina’s young children and their families)

There are roughly 816,700 children five and under in North Carolina. Young children comprise eight percent of the state population. The number of young children is steadily increasing and is expected to increase by 29 percent by 2030. However, young children as a percentage of total state population will remain fairly constant. During the same period senior citizens will increase from 14 percent to 18 percent of the state population. This is relevant to early learning because the increase in seniors relative to working age adults means that the productivity of each member of the future workforce will have to increase in order to generate the economic growth necessary to support the burgeoning dependent population. Those future workers are today’s young children. The pending population imbalance is yet another economic reason to invest in early childhood education.

Each year approximately 122,302 babies are born in North Carolina, 28 percent are born into poverty. Over half (54%) of North Carolina births are paid for by Medicaid.

In 2012, 49,170 North Carolina babies were born to unmarried mothers. The percentage of births to unmarried women increased from 29 percent in 1990 to 41 percent in 2012. Single parenthood is highly correlated with child poverty and other risk factors that high quality ECE can help counteract.

LABOR FORCE PARTICIPATION OF PARENTS

Sixty-two percent of North Carolina women who gave birth in 2013 were in the labor force, up just slightly from 56.2 percent in 2005.

In North Carolina, just over two-thirds of children under six live in households in which all parents work or are seeking work, up from 62 percent in 2005.
“Early Care and Education” is not a standard industrial classification. Rather, ECE is a collection of inter-related and often overlapping programs, services, and institutions from several different industrial sub-sectors including Individual and Community Services, Child Daycare Services, Elementary Education, and Healthcare. The ideal birth-to-five ECE system is one in which the individual components form a seamless continuum through which a child progresses from birth until kindergarten entry. Many state systems are striving toward this ideal, emphasizing cooperation, collaboration and communication between ECE service categories, programs, and providers. The federal government is emphasizing alignment with other ECE service categories in its funding criteria for the major early childhood block grants. However, because the components of the ECE continuum still function independently of each other, they are addressed individually in this section.

**HOME VISITING**

In 2014, over 8,000 North Carolina families received publicly-funded early childhood home visitation (ECHV).

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**Table 1. Labor Force Participation of NC Women with a Birth in the Past 12 Months, 2005 and 2013**

<table>
<thead>
<tr>
<th></th>
<th>Percentage</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>62.0%</td>
<td>73,099</td>
</tr>
<tr>
<td>Single</td>
<td>66.3%</td>
<td>28,375</td>
</tr>
<tr>
<td>Married</td>
<td>59.6%</td>
<td>44,724</td>
</tr>
</tbody>
</table>

**Table 2. NC Children Five and Under in Families With all Parents in the Labor Force 2005 and 2013**

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>478,102</td>
<td>66%</td>
</tr>
<tr>
<td>2013</td>
<td>429,225</td>
<td>68%</td>
</tr>
<tr>
<td>Change</td>
<td>48,877</td>
<td></td>
</tr>
<tr>
<td>Annual Average Change</td>
<td>6,110</td>
<td></td>
</tr>
</tbody>
</table>

**Table 3. North Carolina Public Funding for Home Visiting by Source, 2014**

<table>
<thead>
<tr>
<th>Funder</th>
<th>Funding</th>
<th>Source of Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart Start</td>
<td>$9.1 million</td>
<td>State</td>
</tr>
<tr>
<td>DHHS Public Health Division</td>
<td>$5.6 million</td>
<td>State and Federal</td>
</tr>
<tr>
<td>Early Head Start</td>
<td>$8.1 million (estimated)</td>
<td>Federal</td>
</tr>
<tr>
<td>Total</td>
<td>$23.8 million</td>
<td></td>
</tr>
</tbody>
</table>

---

ii Census Bureau industrial classifications

Early childhood home visiting programs seek to improve health, school readiness, and family economic self-sufficiency by connecting the families of very young children to the community resources, information, coaching, and support they need to parent effectively. High quality home visiting programs can improve a child’s chances of healthy development and school readiness and have been shown to reduce childhood injuries, child maltreatment, and welfare dependency for participating families.

Home visits generally consist of education, support, referrals for needed services, and screenings for maternal mental health issues, infant developmental delays, maternal substance abuse, intimate partner violence, and other risk factors.

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* $1,121 Early Head Start home visiting slots X $7250/slot
The term “home visiting” refers to a mechanism of service delivery but not to any particular program, model, or content. There are dozens of nationally recognized early childhood home visiting models, several of which are currently being utilized in North Carolina. For purposes of this analysis, a home visiting program is defined as:

A voluntary program whereby a specially trained professional or paraprofessional regularly and frequently visits an expectant parent, new parent, or primary caregiver of a child from birth to kindergarten entry to improve the health, development, and well-being of both child and family by fortifying the parent-child relationship.

In 2014, public funding for ECHV in North Carolina totaled approximately $24 million. Home visiting programs were funded by Smart Start, the Public Health Division of the North Carolina Department of Health and Human Services, and Early Head Start.

For state fiscal year (SFY) 2013-2014 Smart Start allocated $16.1 million to family support activities including $9.1 million for home visiting. For more information on Smart Start see the box on page 8. Table 4 shows these allocations by program.

Smart Start funds Parents as Teachers, Healthy Families America, and Nurse Family Partnership programs through local Smart Start partnerships. Other family supports funded by Smart Start include outreach to families, parent education, and advocacy services.

### Table 4. Smart Start Home Visitation 2013-2015

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Budgeted</td>
<td>Locations</td>
</tr>
<tr>
<td>Parents as Teachers</td>
<td>$7.20 million</td>
<td>45 local partnerships in 60 counties</td>
</tr>
<tr>
<td>Healthy Families America</td>
<td>$1.25 million</td>
<td>5 local partnerships in 5 counties</td>
</tr>
<tr>
<td>Nurse Family Partnership</td>
<td>$310,827</td>
<td>5 local partnerships in 6 counties</td>
</tr>
<tr>
<td>Other HV and Family Support</td>
<td>$290,959</td>
<td></td>
</tr>
<tr>
<td><strong>Total Funds Budgeted</strong></td>
<td><strong>$9.05 million</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: Smart Start, 2015

iii The terms “regularly” and “frequently” serve to differentiate home visitation as defined here from the one or two post-partum nurse home visits offered by some health care providers and nonprofits. These services, although quite beneficial, are not part of the birth-to-five early learning continuum as defined here.

### Figure 4. Families Served by Parents as Teachers Home Visiting through NC Smart Start

<table>
<thead>
<tr>
<th>State Fiscal Year</th>
<th>Parents</th>
<th>Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-2012</td>
<td>4,146</td>
<td>5,605</td>
</tr>
<tr>
<td>2012-2013</td>
<td>3,723</td>
<td>5,043</td>
</tr>
<tr>
<td>2013-2014</td>
<td>3,235</td>
<td>4,304</td>
</tr>
</tbody>
</table>

Source: Smart Start, 2015
for families of children with special needs. Parents as Teachers served over 3,000 families in 2013-2014, as shown in Figure 4.

The Public Health Division of the North Carolina Department of Health and Human Services (DHHS-PHD) is the state’s lead agency for the federal Maternal, Infant, and Early Childhood Home Visiting (MIECHV) program. MIECHV is the federal government’s most prominent and well-resourced home visiting initiative. North Carolina receives $3.4 million in MIECHV formula grant funds annually. In 2014, 448 families in 12 North Carolina counties received 4,761 MIECHV-funded home visits from the Nurse Family Partnership and Healthy Families America programs.7 DHHS-PHD also receives $1.1 million in state appropriations and $1.1 in federal Maternal and Child Health (Title V) block grant funding for home visiting. Funds by source are shown in Table 5.

Early Head Start provides home visiting services to low-income and impoverished North Carolina families through the program’s “home-based option” and its services for pregnant women. Home visitation services are targeted to families with children ages birth to age three and children with disabilities who are eligible for services through the North Carolina Infant Toddler Program, the state’s early intervention program (see below). In 2014, Early Head Start funded approximately 1,121 home visiting slots in North Carolina.8

Some home visiting programs also receive substantial private contributions. North Carolina Nurse Family Partnership receives contributions from philanthropies including the Kate B. Reynolds Charitable Trust, the Duke Endowment, and the Blue Cross and Blue Shield of North Carolina Foundation.

**EARLY INTERVENTION**

In 2013 19,914 North Carolina children ages birth through two received publicly-funded early intervention services to reduce the effects of developmental delay, emotional disturbance, or chronic illness.9

The federal Individuals with Disabilities Act (IDEA) requires states to provide early intervention services to all eligible infants and toddlers. Early intervention programs identify and provide services to children who have, or are at risk of having, developmental

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**Race to the Top Early Learning Challenge Grant (RTT-ELC)**

RTT-ELC is a joint effort between the U.S. Departments of Education and Health and Human Services to improve access to high quality ECE for at-risk children by strengthening state ECE systems. North Carolina was awarded $69.9 million by RTT-ELC for the 5-year period 2012-2016. North Carolina is using the award to pursue ten goals:

1. Establish higher program standards
2. Support teachers working on their B-K license
3. Increase the number of developmental screenings for infants and toddlers
4. Increase developmental screening for children with high needs and referrals for additional services
5. Provide better child access and participation in ongoing health care and well-child visits
6. Develop and implement a Kindergarten Entry Assessment
7. Provide focused services for high needs children, families and teachers in Transformation Zone counties
8. Conduct long-term strategic planning to improve program quality, services and outcomes for young children
9. Plan to serve more children in high-quality programs
10. Plan to sustain efforts beyond the RTT-ELC grant period.

Source: NC RTT-ELC website: http://earlylearningchallenge.nc.gov/about-us

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**Table 5. North Carolina Department of Health and Human Services Home Visiting Funding**

<table>
<thead>
<tr>
<th>Program</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal, Infant, and Early Childhood Home Visiting</td>
<td>$3.4 million</td>
</tr>
<tr>
<td>Title V Maternal and Child Health Services Block Grant</td>
<td>$1.1 million</td>
</tr>
<tr>
<td>State Appropriations</td>
<td>$1.1 million</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$5.6 million</strong></td>
</tr>
</tbody>
</table>

Source: North Carolina Department of Health and Human Services, Public Health Division
problems with speech, hearing, vision, motor skills, or social-emotional skills. North Carolina’s Infant Toddler program delivers early intervention services through a statewide network of 16 regional Child Developmental Services Agencies (CDSAs). The NC Infant Toddler program is funded by state appropriations, Medicaid, and grants from the federal Early Intervention Program for Infants and Toddlers with Disabilities (IDEA Part C). State fiscal year 2013-2014 funding for the North Carolina Office of Early Intervention totaled $67.3 million—$46.6 million in federal grants, including $12 million from IDEA Part C, and $20 million in state appropriations.

**CHILD CARE**

Affordable child care has long been recognized as a critical economic support for families, employers, and communities because it enables parents to work, further their educations, and obtain job training. More recently, it has become evident that high quality early childhood programs generate public sector cost savings and other economic benefits by enhancing children’s school readiness and chances for long-term success.

In 2014, 4,009 licensed child care centers served 166,389 North Carolina children ages five and under. Fifty-eight percent of centers were private, for-profit businesses.

**Smart Start**

Smart Start is a statewide network of 76 nonprofit local partnerships that seeks to “advance a high quality, comprehensive, accountable system of care and education for every child beginning with a healthy birth.” Smart Start partnerships support children birth through five and their families with an array of essential services including child care subsidies, child care quality improvement, family supports, early literacy initiatives, and programs to improve child health. Smart Start serves as the state’s early childhood infrastructure: maximizing local control in establishing early childhood priorities while ensuring fiscal and programmatic accountability. Smart Start is funded primarily by the state with a required local match and is administered by the North Carolina Partnership for Children under contract to the North Carolina Division of Child Development and Early Education. Funding for Smart Start peaked at $231 million in fiscal year 2000-2001 and has since declined to roughly $147 million.

http://www.smartstart.org/
Another 11,000 young children were cared for in North Carolina’s 2,500 licensed family child care homes. North Carolina family child care providers serve a median of five children and a maximum of 15 children.\textsuperscript{11}

Most North Carolina child care businesses have fewer than 20 employees. According to the US Census Bureau, 13,981 North Carolina child care businesses are sole proprietorships with no employees.\textsuperscript{12} The Census data does not indicate whether these businesses are DHHS licensed, but based on the number of DHHS-licensed family child care homes reported above, it is clear that most are not.

A comparison of Census Bureau establishment data to state licensure data suggests that 43 percent of child care businesses are state-regulated.\textsuperscript{13} Ninety four percent of children enrolled in regulated child care attend licensed centers,\textsuperscript{13} as shown in Table 6.

Quality child care is an essential support for working families, but, without subsidies, it can be prohibitively expensive. Full-time center-based care for one infant constitutes 42 percent of the state median income for a single mother family in North Carolina.\textsuperscript{14} The average annual cost of center-based care as a percentage of state median income is shown in Table 7.

Child care assistance can make quality care affordable for low income working families, enabling them to work, go to school, and attain or maintain financial

\textsuperscript{vi} This estimate should be interpreted with caution as Census establishment data and state licensure data are not strictly comparable.
autonomy. Child care subsidies have been shown to increase mothers’ duration of employment, hours worked, and earnings.¹⁰

North Carolina subsidizes child care for low income families through a locally-administered, state-supervised voucher system. Child care subsidies are also available through local Smart Start Partnerships. To qualify for assistance, parents must be working, seeking work, or attending school. Children in the child welfare system and those with specific developmental needs qualify for subsidized care, regardless of parental employment status. In North Carolina, 93 percent of subsidized child care recipients qualify for assistance because their parents are employed.¹⁶

Families of children under six must and have household income below 200 percent of the Federal Poverty Level (FPL) and families seeking unsubsidized care for children ages six to eleven must have income below 133 percent FPL.¹⁶ Eighty-five percent of families receiving child care subsidies earn less than $25,000 per year.¹⁷ Parents are required to pay a fee equal to 10 percent of their gross monthly income. Table eight shows income thresholds for subsidized child care by child age and household size.

Approximately 84,500 North Carolina children receive subsidized child care each month.¹⁶ Sixty-eight percent of children receiving subsidized care are under age six.¹⁸

**Incentives to Improve Quality**

All child care is not alike. Only high quality child care received consistently and over a significant period of time has been shown to enhance school readiness or improve other outcomes. The highest quality of care is also the most costly to provide because it requires well-trained staff and low child-staff ratios. North Carolina encourages providers to invest in quality improvements through the North Carolina star rated license system. Participating providers are rated on a five tier quality scale that uses stars to denote levels of quality. A program with one star meets the state’s minimum licensing standards. Programs that maintain a higher level of quality can obtain licenses of up to five stars. Quality is

---

### Table 8. 2015 Federal Poverty Guidelines

<table>
<thead>
<tr>
<th>Age of Child</th>
<th>6-11</th>
<th>0-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persons in household</td>
<td>100%</td>
<td>133%</td>
</tr>
<tr>
<td>2</td>
<td>$15,930</td>
<td>$21,187</td>
</tr>
<tr>
<td>3</td>
<td>$20,090</td>
<td>$26,720</td>
</tr>
<tr>
<td>4</td>
<td>$24,250</td>
<td>$32,253</td>
</tr>
<tr>
<td>5</td>
<td>$28,410</td>
<td>$37,785</td>
</tr>
<tr>
<td>6</td>
<td>$32,570</td>
<td>$43,318</td>
</tr>
<tr>
<td>7</td>
<td>$36,730</td>
<td>$48,851</td>
</tr>
<tr>
<td>8</td>
<td>$40,890</td>
<td>$54,384</td>
</tr>
</tbody>
</table>

Source: the poverty guidelines updated periodically in the Federal Register by the U.S. Department of Health and Human Services under the authority of 42 U.S.C. 9902(2).

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### Figure 6. North Carolina Early Childhood Programs by Star Level, 2014

- Under 3 Stars: 39%
- 3 Stars: 26%
- 4 Stars: 15%
- 5 Stars: 20%

determined by program standards and staff qualifications. The percentage of centers meeting each star level is shown in Figure 6.

Programs with higher star levels receive higher subsidy program reimbursements. Programs that participate in the star rated license system qualify for a variety of quality improvement supports including voluntary program assessments, training and technical assistance through the state’s system of Child Care Resource and Referral (CCR&R) agencies, workforce scholarships through TEACH Early Childhood®, and salary supplements through the Child Care WAGES® program. Twenty seven percent of ECE teachers have received a TEACH Early Childhood® scholarship and 40 percent have received a salary supplement.

The North Carolina Division of Child Development and Early Education (DCDEE) licenses child care centers and family child care homes statewide. DCDEE licensing consultants monitor child care facilities for compliance with the requirements of their star rating. Licensing staff also provide technical assistance and consultation to providers.

The majority of children attending licensed programs receive high quality care. All NC Pre-K classrooms must maintain a four- or five-star license and over 70 percent of children enrolled in child care attend four- or five-star programs.

CCR&R agencies are a key component of the state’s ECE quality improvement infrastructure. Funded primarily by North Carolina’s federal Child Care and Development Block Grant allocation, CCR&Rs facilitate access to high quality ECE through a range of activities including consumer education and referrals, professional development, technical assistance, data collection and analysis, and public awareness. In North Carolina, CCR&R services are provided by a statewide network of 14 regional agencies, some of which are also Smart Start partnerships.

### Table 9. North Carolina: Child Care Funding by Source, 2013-14 ($ millions)

<table>
<thead>
<tr>
<th></th>
<th>State</th>
<th>Federal</th>
<th>Private and Local</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Care Quality</td>
<td></td>
<td>$16.8</td>
<td></td>
<td>$16.8</td>
</tr>
<tr>
<td>Child Care Regulation</td>
<td></td>
<td>$13.6</td>
<td></td>
<td>$13.7</td>
</tr>
<tr>
<td>Child Care Subsidy</td>
<td>$21.7</td>
<td>$250.3</td>
<td></td>
<td>$272.0</td>
</tr>
<tr>
<td>Smart Start Child Care Subsidy</td>
<td>$63.7</td>
<td>$7.0</td>
<td></td>
<td>$70.7</td>
</tr>
<tr>
<td>Early Head Start (estimated)</td>
<td></td>
<td>$14.0</td>
<td></td>
<td>$14.0</td>
</tr>
<tr>
<td>Federal Child &amp; Dependent Care Tax Credit (ages 0-5 only)</td>
<td></td>
<td>$96.2</td>
<td></td>
<td>$96.2</td>
</tr>
<tr>
<td>State Child &amp; Dependent Care Tax Credit (ages 0-5 only)</td>
<td></td>
<td>Repealed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>State Employer Child Care Expense Exclusion</td>
<td>$11.4</td>
<td></td>
<td></td>
<td>$11.4</td>
</tr>
<tr>
<td>Child and Adult Care Food Program (child care only)</td>
<td></td>
<td>$75.4</td>
<td></td>
<td>$75.4</td>
</tr>
<tr>
<td>RTTT ELC (2016 budget with no cost extension)</td>
<td></td>
<td>$15.9</td>
<td></td>
<td>$15.9</td>
</tr>
<tr>
<td>Private Pay (includes child care subsidy co-pays)</td>
<td></td>
<td></td>
<td>$825.1</td>
<td>$825.1</td>
</tr>
<tr>
<td>Total</td>
<td>$96.8</td>
<td>$489.2</td>
<td>$825.1</td>
<td>$1,411.1</td>
</tr>
</tbody>
</table>
North Carolina’s regulated child care industry generates approximately $1.4 billion in revenue annually.

Funding for regulated child care comes from a wide variety of sources. Child care subsidies are financed with a combination of state appropriations, the federal Child Care and Development Block Grant (CCDBG), Temporary Assistance to Needy Families (TANF) block grant, and Title IV-E Foster Care funds.

Private payments for licensed child care total $825 million. This includes payments to providers by families that don’t receive child care subsidies and copayments made by families who do. The estimate of private payments is based on the assumption that approximately 177,389 children ages five and under are enrolled in regulated child care programs at an average annual cost of $8,440 per child. This estimate of private program gross receipts is reduced by public expenditures for ECE services provided in state regulated facilities. The estimate does not include private payments to unlicensed providers, which likely exceed $100 million annually.

The Child and Adult Care Food Program (CACFP) is another significant source of revenue for early childhood programs. CACFP is a federal program that funds the provision of nutritious meals and snacks at child care programs that serve low-income families. In 2013, North Carolina child care providers received $75.4 million in CACFP reimbursements for meals provided to children five and under.

Child care is also provided to low income families through the federally funded Early Head Start program. Early Head Start (EHS) provides intensive child care and development services to children ages three to five and their families. North Carolina’s Early Head Start-Child Care Partnership program is supported by a grant totaling $20.1 million.

### Table 10. North Carolina Early Head Start-Child Care Partnership Grantees by Location and Annual Allocation

<table>
<thead>
<tr>
<th>City</th>
<th>Grantee</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapel Hill</td>
<td>Chapel Hill Training-Outreach Project, Inc.</td>
<td>$600,000</td>
</tr>
<tr>
<td>Charlotte</td>
<td>Child Care Resources, Inc.</td>
<td>$5.3 million</td>
</tr>
<tr>
<td>Durham</td>
<td>Durham’s Partnership for Children</td>
<td>$1.2 million</td>
</tr>
<tr>
<td>Fayetteville</td>
<td>Cumberland Community Action Program, Inc.</td>
<td>$1.5 million</td>
</tr>
<tr>
<td>Goldsboro</td>
<td>Wayne Action Group for Economic Solvency, Inc. (WAGES)</td>
<td>$1.1 million</td>
</tr>
<tr>
<td>Greensboro</td>
<td>Guilford Child Development</td>
<td>$1.5 million</td>
</tr>
<tr>
<td>Hendersonville</td>
<td>Western Carolina Community Action, Inc.</td>
<td>$1.5 million</td>
</tr>
<tr>
<td>Kings Mountain</td>
<td>Cleveland County Partnership, Inc.</td>
<td>$2.3 million</td>
</tr>
<tr>
<td>Kinston</td>
<td>Greene Lamp</td>
<td>$1.1 million</td>
</tr>
<tr>
<td>Raleigh</td>
<td>Telamon Corporation</td>
<td>$1.7 million</td>
</tr>
<tr>
<td>Winston-Salem</td>
<td>Family Services, Inc.</td>
<td>$2.3 million</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>$20.1 million</strong></td>
</tr>
</tbody>
</table>


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ix Weighted average of Center and FCC full-time rates (2013 North Carolina Market Rate Survey)

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x Child care subsidies for children five and under, Center-based Head Start/Early Head Start, and NC Pre-K.

xi 13,981 home-based child care businesses with no employees=$7,658 (average annual gross receipts per business) = $107.6 million See: US Census Bureau Non-employer Statistics for number of providers and average annual gross receipts

xii Child and Adult Care Food Program: Cash Payments from Data on CACFP payments in [http://www.fns.usda.gov/pd/child-nutrition-tables](http://www.fns.usda.gov/pd/child-nutrition-tables), reduced by 10 percent (3% for adult/disabled and 7% for children ages 6-11)
development services for pregnant women, infants, toddlers and their families in both center and home-based settings. In 2014, EHS funded approximately 1,475 center-based slots\textsuperscript{iii} in North Carolina at a cost of roughly $14 million.\textsuperscript{iv} EHS offers a comprehensive suite of services that includes early childhood education, medical and behavioral health screenings and referrals, vision, hearing and developmental screenings, oral health services, social supports and referrals, nutrition, parent engagement and services for children with disabilities. EHS programs adhere to high standards of quality that include degreed teachers, low ratios of children to teachers, and small group sizes.

The services provided by Early Head Start are far more comprehensive that those of a typical child care center. They are also more costly to provide and reach only a small fraction of eligible children and families.\textsuperscript{v} The Early Head Start-Child Care (EHS-CC) Partnership Project was established to simultaneously expand the reach of Early Head Start and improve the quality of child care. In 2014, 11 North Carolina grantees were awarded a total of $20.1 million per year for five years to establish partnerships between Early Head Start programs and child care programs. Participating child care providers are required to meet Early Head Start program performance standards and provide comprehensive, full-day, full year services. Grantees are strongly encouraged to support the birth-to-five early learning continuum of care\textsuperscript{vi} by aligning EHS-CC Partnership services with those of Maternal, Infant, Early Childhood Home Visiting (MIECHV) grantees and state preschool programs.

Federal and state income tax credits help subsidize child care for middle income families. The federal Child and Dependent Care Tax Credit (CDCTC) offsets the cost of child and dependent care expenses for families with federal income tax liability. Low-income working families typically have no net federal income tax liability and thus cannot benefit from the credit. In 2013, North Carolina families of young children received $96 million in federal Child and Dependent Care Tax Credits.

The North Carolina Credit for Child Care and Certain Employment-Related Expenses was repealed effective January 1, 2014. Prior to repeal, the non-refundable credit was equal to between 7 and 13 percent of expenses eligible for the federal CDCTC and was limited to $390 per dependent, not to exceed $780 total. In 2012, the credit returned approximately $51.4 million to North Carolina families.\textsuperscript{vii}

North Carolina allows employers to exclude expenses for providing child care for employees from taxable income. The exclusion cost North Carolina approximately $11.4 million in 2014-15.\textsuperscript{viii}

**Pre-K**

Pre-K programs prepare preschoolers for kindergarten and seek to ensure their academic success through third grade. Pre-K programs share three key characteristics:

1. High program standards,
2. Serve 4-year-old and sometimes serve 3-year-old children
3. Intense focus on school readiness.\textsuperscript{ix}

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\textsuperscript{iii} This is in addition to the children mentioned previously as receiving home visiting through Early Head Start home-based option.

\textsuperscript{iv} Estimates derived from EHS funded enrollment by service category data for North Carolina grantees extracted by the federal HHS ACF Head Start Bureau and Head Start funding from the National Head Start Association.


\textsuperscript{vi} In 2011, the income level at which a family with children incurred positive federal income tax liability (after refundable tax credits were factored in) was $31,484 (214% FPL) for a single parent with one child and $37,887 (170% FPL) for a two parent family with two children. Source: Urban-Brookings Tax Policy Center. “Tax Entry Thresholds After Credits” http://www.taxpolicycenter.org/taxfacts/displayfact.cfm?Docid=470
The North Carolina Pre-Kindergarten Program (NC Pre-K, formerly More at Four) provides high-quality educational experiences to enhance school readiness for at-risk four-year-olds. Since its inception in 2001, NC Pre-K has served over 292,000 children. In 2013–2014, 29,346 children in 26,617 contracted slots received state pre-K services. The nearly 2,000 NC Pre-K classrooms are located in 1,165 sites throughout the state.

NC Pre-K services are provided during the public school year for 6.5 hours per day. The program is a mixed delivery system with classrooms in public schools, private centers and Head Start centers, but all classrooms adhere to the same basic program standards. Standards apply to a variety of quality determinants including class size, child/teacher ratios, curriculum, screening and assessment, and teacher training and education. In addition, NC Pre-K classrooms must have at least four stars on the state’s five-tiered quality rating scale. Over two-thirds of NC Pre-K classrooms have five stars, the state’s highest quality rating. NC Pre-K is one of only five state pre-K programs to meet all ten of the National Institute for Early Education Research (NIEER) pre-K quality benchmarks.

Provider reimbursements range from $400 - $650 per child per month depending on the type of program and teacher qualifications. Annual reimbursement averages $5,000.

To qualify for North Carolina Pre-K children must have family income less than 75 percent of state median income. A limited number of higher income children are allowed to participate if they are at risk for poor educational outcomes due to physical or developmental disabilities, chronic health conditions or limited English proficiency. Active duty military qualify regardless of income. Over 90 percent of participating children qualify for free or reduced lunch.

The appropriation for NC Pre-K totaled $144.9 million for 2014-15, a 3.1 percent increase over funding in 2013-14. NC Pre-K is financed with a blend of federal TANF funds, state appropriations and lottery funds.

As was the case in many states, state appropriations for NC Pre-K declined during the recession. The loss of state funding was partially offset with federal recovery funds during the economic downturn. Today, state appropriations for NC Pre-K remain below pre-recession levels and federal TANF funds have taken the place of some state funds. Figure 7 shows funding trends since the 2008-2009 year.

Head Start is a national pre-K program that provides a variety of key educational, health, and parental engagement services to at-risk children and families. In 2013, North Carolina’s 48 Head Start preschool programs served 11,857 children. Seventy-nine percent of North Carolina’s Head Start pre-K programs are full-day and full-week. Federal funding for Head Start programs in North Carolina totaled $162.7 million in 2013.

Additional sources of federal funds for pre-K include the Preschool Grants for Children with Disabilities Program and Title I (Education for the Disadvantaged) funds. In 2014-15 an estimated 10,854 North Carolina three- and four-year olds received federally-funded special education pre-K services.

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xvii Includes Early Head Start

xviii Public schools can use Title I funds to provide additional academic support and learning opportunities to low-achieving children. Title I of the No Child Left Behind Act permits school districts to use federal Title I funds for “preschool programs.” For purposes of Title I, preschool programs are defined as programs for children not yet old enough to enroll...
(early care and education workforce)

In addition to making employment possible for thousands of working parents, North Carolina’s ECE industry directly employs approximately 39,909 workers in a broad range of occupations. Figure 8 contrasts ECE employment with employment in a number of key North Carolina industries.

HOME VISITING WORKFORCE

There are approximately 415 home visitors working in publicly financed ECHV programs in North Carolina. Early childhood home visitors are an extremely diverse group with a wide range of qualifications. Most, but not all, are degreed and most have prior experience in early childhood. The major national home visiting models differ greatly in their staff requirements, but Smart Start requires home visitors to be degreed, even if the individual program models do not. Nurse-Family Partnership (NFP) requires that home visitors be registered nurses with a minimum of a bachelor’s degree in nursing. The Parents as Teachers (PAT) program model requires home visitors to have at least a high school diploma and two years of experience working with young children or parents, but PAT programs funded through Smart Start require a bachelor’s degree. Early Head Start and Healthy Families America (HFA) are among the minority of home visiting programs that do not have a policy stating minimum education requirements for home visiting staff. Early Head Start seeks home visitors with experience and education in child development and early childhood education. Approximately 68 percent of North Carolina’s 121 EHS home visitors and 89 percent of PAT parent educators have an associate degree or better. Figure 9 provides a full breakdown of North Carolina EHS home visitors by level of educational attainment.

Figure 8. North Carolina Employment, Selected Sectors and Sub-Sectors, 2013

Figure 9. Educational Attainment of Early Head Start Home Visitors

Source: Head Start 2013 PIR data compiled by Center for Law and Social Policy (CLASP)

xix Many programs that do not require home visitors to have degrees have a strong preference for those that do.

in traditional public school. The US Department of Education does not, however, maintain data on the districts that exercise the option to fund pre-K or the extent to which Title I preschool spending is allocated to state pre-K. In the 2011-2012 school year, 2.6 percent of US children attending Title I-funded education programs were ages 0-5 and thus labeled as “pre-K students.” See: New America Foundation. Federal Education Budget Project. No Child Left Behind Act - Title I Distribution Formulas. http://febp.newamerica.net/background-analysis/no-child-left-behind-act-title-i-distribution-formulas.
Home visitor salaries also vary greatly. Parent educators employed by Parents as Teachers earn an average annual salary of $45,000 (2013 dollars), while EHS home visitors earn $28,953, and registered nurses in North Carolina earn an average of $60,000 annually.

**EARLY INTERVENTION WORKFORCE**

Early intervention services are extremely varied and programs employ or contract with a variety of practitioners, including speech and language pathologists, occupational therapists, habilitation specialists, and infant mental health specialists, many on a part-time basis. Thus it is hard to say exactly how many North Carolinians are employed in the early intervention field. The Early Intervention Division of the North Carolina Department of Public Health has roughly 660 full time employees. The Early Intervention Division contracts with local governmental and non-governmental agencies for the delivery of some early intervention services. These contracts, which total about $16 million in the 2014-15 budget are estimated to support 268 additional positions.

**CHILD CARE WORKFORCE**

The child care workforce is composed of individuals, primarily women, employed in private child care programs and private preschools as well as self-employed individuals who operate child care businesses, usually from their homes.

North Carolina’s full-time, center-based early childhood teaching workforce consists of roughly 28,200 teachers and teaching assistants. Statewide, the 2014 (director reported) median hourly wage in early childhood programs was $9 for entry-level teachers and $12.02 for the highest paid teachers in each program. Median wages were higher for teachers and staff in programs that include one or more NC Pre-K classrooms and in programs with higher star ratings.

North Carolina’s over 2,500 family child care (FCC) providers typically work long hours – 95 percent report working 40 or more hours and 20 percent report working more than 65 hours weekly. Based on the results of the 2014 Child Care Workforce Survey, the Child Care Association estimated that FCC providers had median earnings of $7.05/hour, with the lowest-income quintile earning under $3.75/hour.
Census data indicate that 13,981 North Carolinians operate child care businesses with no employees. Some FCC providers fall into this category.

NC PRE-K WORKFORCE

NC Pre-K employs about 2,100 lead teachers—1,168 in the public schools and 932 in a variety of community-based programs.

NC Pre-K teachers have an average of 14 years of teaching experience. Public school pre-K teachers earn $33,000 over a 10-month period if they have less than five years experience and $40,000 with 10 to 14 years experience. The state-mandated minimum salary for pre-K lead teachers in non-public schools is $26,260 for entry-level teachers and $37,800 for teachers with 15 years of experience. A NC Pre-K teacher assistant with an ECE associate degree employed in a non-public program earns a minimum of $15,810 with no experience and $22,758 with 15 years of experience.

Teachers who work in NC Pre-K classrooms must have at least a bachelor’s degree and birth-kindergarten (B-K) teaching license. In school year 2013-2014, 86 percent of NC Pre-K lead teachers had a bachelor’s degree and 14 percent had a master’s degree; 84 percent also had a B-K license. The education and credentials of NC Pre-K teachers have increased steadily over time.

NC Pre-K Spillover Effects on Teacher Compensation

Teacher wages and the rate at which those wages increase over time are higher in child care centers that include one or more NC Pre-K classrooms. This is true for teachers at all levels of experience teaching all children ages birth through five, but the impact appears greatest for highly experienced teachers.

The highest paid teachers working in settings with an NC Pre-K classroom make over twice as much as the highest paid teachers in settings without an NC Pre-K classroom. The highest paid assistant teachers in settings with a Pre-K classroom had a median wage 40 percent higher than teachers in other settings.

Working in a program with one or more NC Pre-K classrooms also increases the likelihood that all center teachers will have access to employee benefits, including health insurance.

Head Start

In 2013, Head Start programs in North Carolina employed 7,109 staff including 1,989 teachers and 1,286 assistant teachers. That year, Head Start teachers in North Carolina earned an average salary of $23,419.

The US Bureau of Labor Statistics predicts that jobs for preschool teachers in the US will increase by 17 percent between 2012 and 2022, faster than the national rate of
14 percent for all occupations. Nationally, increases in the preschool age population are expected to account for most of the growth.

(ECE impact on labor force participation and worker productivity)

High quality early care and education does more than provide a safe place for children while their parents work. At its most effective, ECE engages parents and connects them to the resources they need to support their families, including education, training, and job search assistance.

LABOR FORCE ATTACHMENT

Many home visiting programs help parents to advance their education, obtain training, and find jobs. Early Head Start home visiting, Nurse Family Partnership and Parents as Teachers have all been shown to increase family economic self-sufficiency. In one study, mothers who received home visitation from Nurse Family Partnership worked 82 percent more than control group members during their child’s first four years.

Access to affordable child care is often the lynch pin of parental employment. Numerous studies have shown that mothers with access to affordable, stable, child care are more likely to get employed and stay employed. Conversely, lack of access reduces a mother’s likelihood of getting and keeping a job. One-in-four parents on the wait list for child care subsidies in North Carolina reported that they had resigned or lost their jobs while waiting for child care. Maternal workforce participation and productivity have profound implications for child wellbeing, family economic security, and the productivity of the economy overall.

ABSENTEEISM

Breakdowns in child care are a leading cause of employee absenteeism. Nationally, employees with children under 13 miss an average of eight to nine days of work per year due to child care problems. Parents may lose income when they miss work, but because the absence of one employee can diminish the productivity of many others, the impact of absenteeism on productivity is considerably higher than just the wages lost by the absent employee. A 2005 study estimated that unscheduled absenteeism cost US employers $3,600 per worker per year for hourly workers and $2,650 per worker per year for salaried employees ($4,308 and $3,171 in 2015 dollars respectively). By this metric, absences from work by mothers of young children due to child care breakdowns translate into over $1 billion dollars in lost productivity for the North Carolina economy each year.

CHILD CARE ASSISTANCE FOR LOW INCOME WORKING FAMILIES

Quality child care is an essential support for working families. Child care assistance makes this vital support accessible to low income working families. Child care subsidies have been shown to increase the duration of employment, the number of hours worked, and earnings of working mothers. Subsidized child care reduces a family’s likelihood of incurring large debt and becoming dependent on welfare. Child care assistance also

Table 12. Estimated Impact of Child Care on the Earnings of North Carolina’s Working Mothers

<table>
<thead>
<tr>
<th></th>
<th>Parents</th>
<th>Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment contingent on availability of paid child care</td>
<td>66,892</td>
<td>$1.8 billion</td>
</tr>
<tr>
<td>Not working due to lack of affordable child care</td>
<td>37,682</td>
<td>-1.0 billion</td>
</tr>
<tr>
<td>Absenteeism due to child care issues</td>
<td>278,717</td>
<td>-1.04 billion</td>
</tr>
</tbody>
</table>

Source: Author Calculations

xxi $3,740 average annual cost per worker of unscheduled absenteeism x 278,717 employed mothers of children under 6 = $1.04 billion
yields long-term benefits by improving the quality of care children receive and the likelihood that they will be cared for in licensed settings.\textsuperscript{63}

Paying for child care can undermine a family’s financial stability. The cost of child care is effectively a tax on parent wages, which reduces a family’s ability to purchase other necessities, save for emergencies, or build assets. Child care costs have been shown to influence parents’ employment decisions, particularly those of mothers.\textsuperscript{64} In one survey, 40 percent of non-working mothers cited child care costs as their primary barrier to employment.\textsuperscript{65}

There are 278,717 working mothers\textsuperscript{xxii} with children under six in North Carolina.\textsuperscript{66} Nationally, approximately 32 percent of working families pay for child care.\textsuperscript{67} Assuming 75 percent of working mothers who pay for child care have no alternative work arrangements or care options and would thus be unable to work were paid child care not available, and multiplying the number of mothers whose employment is assumed to be dependent on child care (66,892) by the annual median earnings for North Carolina women ($26,748)\textsuperscript{68} yields an estimated $1.8 billion in wages and salaries directly attributable to access to child care.

In North Carolina, 145,684 mothers of children under 6 are not in the labor force\textsuperscript{69} and another 42,726 are unemployed.\textsuperscript{70} If lack of child care is the reason 20 percent of these mothers do not work, the resulting cost to North Carolina is $1 billion in lost wages and salaries.

Finally, if the 278,717 working mothers of children under 6 each miss 8.5 days of work per year due to child care issues, the North Carolina economy loses $1 billion in unrealized productivity. Unfortunately, the data upon which these estimates are based was only available for working mothers. The work lives of fathers are increasingly impacted by access to child care; thus, the estimates in Table 12 do not reflect the full labor market impact of access to child care.

\textbf{(ECE economic impact)}

Within any economy there are industries that serve the local market and those that serve remote markets. Those that serve remote markets are called “economic base” or “basic” industries. Economic base industries draw money into the local economy, usually through the export of goods or services. Manufacturing and tourism are economic base industries, as are businesses that draw most of their revenue from the federal government.\textsuperscript{xviii} “Non-base” industries produce goods and services for consumption by local residents. Non-base industries do not draw revenue into the state from outside; rather, they recirculate funds within the state.

ECE services are generally considered non-base because more than 50 percent of industry revenue originates within the local economy: parents pay local providers for services and local providers spend much of the income they earn in the local community, but little new revenue is brought into the community and the overall level of economic activity remains largely unchanged. This dynamic changes when the federal government pays for a significant percentage of services, as is the case in North Carolina. The federal government accounts for about 43 percent of total ECE revenue in North Carolina, about $820 million.

\textsuperscript{xxii} For purposes of this analysis, “working mothers” are mothers who are employed rather than those who are in the labor force, which includes the unemployed.

\textsuperscript{xviii} Manufacturing is the classic example of an economic base industry because rarely are all the widgets produced by a factory consumed by the residents of the community in which the factory is located. Instead, most of the widgets are exported for purchase elsewhere. The revenue from those purchases flows back to the manufacturer and the community in which the widgets were produced, increasing the overall volume of commerce in the local economy.
Employee wages are spent in the local community creating 3,936 jobs & $103.3 million in income.

Parent Employment: 25,818 jobs and $1 billion in income.


<table>
<thead>
<tr>
<th>Output</th>
<th>Employment</th>
<th>Labor Income</th>
<th>State And Local Tax Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td>$1,907.7</td>
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<tr>
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<tr>
<td>Induced</td>
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<td>Total</td>
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Source: IMPLAN, North Carolina 2013


<table>
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<th>Output</th>
<th>Employment</th>
<th>Labor Income</th>
<th>State And Local Tax Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td>$820.35</td>
<td>$422.73</td>
<td>$38.89</td>
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<tr>
<td>Indirect</td>
<td>$294.55</td>
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<tr>
<td>Induced</td>
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<tr>
<td>Total</td>
<td>$1,513.26</td>
<td>$632.83</td>
<td>$58.22</td>
</tr>
</tbody>
</table>

Source: IMPLAN, North Carolina 2013
each year. The flow of federal funds into the state from taxpayers outside the state creates a net increase in the overall level of commerce.

Economic impact is a change in the level of economic activity caused by an influx or outflow of funds from the local economy. Federal spending on ECE in North Carolina creates an inflow of funds and thus a positive economic impact. xxiv

**INPUT-OUTPUT ANALYSIS**

The IMPLAN™ modeling system was used to estimate the economic impact of ECE on the North Carolina economy. IMPLAN is a widely used software package and database for estimating local economic impacts5) using input-output analysis.

Input-output analysis is based on the premise that local economies are composed of numerous interconnected industrial sectors and institutions. Significant changes to one sector or institution affect the many sectors and institutions to which that component is connected. The initial change is called the “direct” effect. As the initial change reverberates throughout the local economy it produces “indirect” and “induced” effects, sometimes referred to as “multiplier” effects. Input-output analysis is a technique for estimating the total economic impact of a change by quantifying the direct, indirect and induced effects using data on the relationships between industrial sectors. These relationships are represented by multipliers. xxv

• Direct effects represent the initial change to the industry in question.
• Indirect effects result when the industries that supply the industry in question respond to the change in demand resulting from the initial impact.
• Induced effects reflect changes in local spending that result from income changes in the directly and indirectly affected industry sectors.

Spending on ECE by private households, philanthropy, and state, local and federal government in North Carolina generates a direct impact when it is received by ECE providers. It generates an indirect impact when those providers purchase goods and services from other local industries and households. Induced impacts result when ECE employees use their wages and salaries to purchase goods and services in the local economy.

The ECE industry in North Carolina employs 39,909, generates annual gross receipts of at least $1.91 billion, xxvi and produces $135.4 million in state and local tax revenue. xxvii The direct impact of the ECE industry catalyzes the creation of an additional 12,225 jobs and generates $1.61 billion in additional output in other sectors. The total employment, income, economic activity, and tax revenue attributable to the ECE industry is presented in Table 12.

In North Carolina, over 50 percent of ECE industry revenue derives from state government, local government, or private households. Because it originates locally, this spending recirculates income within the state economy, but does not increase the overall volume of commerce. However, 43 percent of industry gross receipts ($820 m) derive from the federal government. Because this revenue originates outside North Carolina, it has a net positive impact on the state economy—the economic activity it stimulates is activity that otherwise would not have occurred and thus the economy experiences net growth. The $820 million annual federal investment in ECE in North Carolina supports 17,145 of the industry’s 39,909 jobs, produces $1.51 billion in new economic output, xxviii

xxiv On the other hand, when state governments use state tax revenue to purchase services, each dollar spent by the state government is a dollar that cannot be spent by state taxpayers elsewhere in the economy, neutralizing the immediate economic impact of the spending. Nonetheless, state government investments in ECE pay for themselves many times over by increasing workforce productivity and tax revenue and decreasing a wide range of short and long-term public sector costs. In addition, state spending on ECE generates an immediate net increase in economic activity at the local level as is the case when tax revenue collected statewide is spent on ECE services in low-income communities.

xxv Output multipliers relate the changes in sales to final demand by one industry to total changes in output (gross sales) by all industries within the area. An industry output multiplier of 1.80 indicates $1.00 change in sales by the industry in question would result in a total change in local output of $1.80. Income and employment multipliers relate the change in direct income to changes in total income within the local economy. For example, an income multiplier for a direct industry change of 1.75 indicates that a $1.00 change in income in the direct industry will produce a total income change of $1.75 in the local economy. Similarly, an employment multiplier of 1.75 indicates that the creation of one new direct job will result in a total of 1.75 jobs in the local economy.

xxvi This should be regarded as a lower bound estimate of the industry’s size because it does not account for fees, donations, in-kind contributions and other sources of revenue for ECE programs or the thousands of unregulated child care businesses.

activity and generates $58.2 million in state and local tax revenue. “Net new” economic activity is presented in Table 13.

**ACTUAL ECONOMIC BENEFITS FAR EXCEED INDUSTRY EMPLOYMENT AND GROSS RECEIPTS**

Many of ECE’s most significant economic benefits are not reflected in its multiplier effects or its substantial contribution to gross state product. In the short-term, access to affordable early learning programs helps parents pursue additional education and training, secure stable employment, and be more productive on the job. Child care is frequently a family’s largest expense. Access to affordable care can therefore reduce household stress, stabilize parental employment, and increase a family’s ability to obtain other necessities such as healthy food, healthcare, and housing.

**LONG-TERM IMPACTS**

In the longer term, high-quality early childhood education helps ameliorate the developmental impacts of early stress and prepares young children to succeed in school. Early academic success appears to pave the way to higher levels of educational attainment, better paying and more secure employment, less reliance on public welfare programs, and reduced likelihood of destructive and socially costly behaviors. As such, it is estimated that every dollar invested in quality early care and education saves taxpayers up to $17.00 in future costs.

**HOME VISITING**

By strengthening families, improving parenting skills and helping to identify developmental problems as early as possible, home visiting and early intervention programs lay the ground work for school readiness and the many long-term advantages associated with healthy home environments and early academic success. Research indicates that effective home visiting programs can return as much as $9.50 per dollar invested by reducing spending on health care, criminal justice, child welfare, special education, and remediation. Nurse home visiting has also been shown to increase parental employment and reduce welfare dependence, generating a total benefit to society of over $41,000 per family served.

**EARLY INTERVENTION**

By identifying and treating health and developmental issues early in a child’s life, early intervention programs reduce the need for special education and other costly interventions during the K-12 years, simultaneously saving school districts money and enabling children to derive the greatest possible benefit from their educations.

**CHILD CARE**

Child care can impact child development, school readiness, and lifelong academic, employment and social success. High quality care can improve a wide variety of outcomes. Conversely, low quality care, characterized by insufficient and inconsistent interaction with caregivers, unqualified staff, and few educational opportunities has been shown to impede healthy development, potentially increasing societal costs.
Numerous evaluations of pre-K programs have documented higher test scores, decreased grade retention, reduced time in special education, less crime and delinquency and increased rates of high school graduation. A study specifically of NC Pre-K found that participants exhibited significant growth in a range of language, math, general knowledge, and social skills, which contributed to starting kindergarten on track for learning success. In fact, researchers estimate that if universal, high-quality pre-K were made available to the lowest income quartile of US 3- and 4-year-olds, the public investment would be entirely recouped within six years, and, by 2050, every tax dollar spent on the program would be offset by $3.18 in savings. Ultimately, public sector benefits would exceed costs by tens of billions.

(return on investment is highest for comprehensive systems of quality care)

Each component of the early childhood continuum—home visiting, early intervention, child care and pre-K—has been shown to generate both short-term and long-term economic benefits for participating families and for the economy overall. Each individual ECE service is of tremendous value in its own right, but ECE is most beneficial and cost effective when it is delivered as a comprehensive continuum of services that support children and families throughout the first five years of life. The landmark programs that produced the largest and most enduring documented return on investment, including Perry Preschool, Abecedarian, and Chicago Child-Parent Centers, combined elements of all four service delivery models. Just as children who participate in pre-K are better prepared than those who don’t to thrive in kindergarten, toddlers who participated in high quality child care are better prepared to benefit from pre-K than those whose early environments were less stimulating and secure. Each step in the ECE continuum compounds the value of the previous step and thus a well-coordinated, comprehensive early childhood system will produce the greatest overall benefit at the lowest public sector cost.

A handful of intensive ECE programs have provided the data upon which most of the prominent return on investment studies have been based. These programs, although different in many respects, shared key characteristics of quality including multi-year program participation and comprehensive services that extended beyond the classroom to address the economic and social welfare of both the child and the family.

The Chicago Child-Parent Centers (CPC) provides half-day pre-K for low income 3- and 4-year-olds. CPC requires on-going parental participation and can include supportive services such as health care, social services, free meals, home visits and assistance to parents in completing school. Children who attended CPC preschool were more likely than children who did not attend pre-K to complete high school, attend college, and have health insurance. In adulthood, CPC children were less likely to receive any form of public assistance, be arrested for a felony, convicted of a felony, or incarcerated. CPC is a large-scale public pre-K program operated by the Chicago Public Schools and, of the three major programs discussed here, the one most comparable to a state pre-K program.

<table>
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<tr>
<th>Table 15. Landmark ECE Studies: Program Characteristics</th>
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<tr>
<td>Years per Program and Hours per Day</td>
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<td>-------------------------------------</td>
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<tr>
<td>Chicago CPC Study</td>
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<td>Perry Pre-School Project</td>
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<td>Abecedarian Project</td>
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The Abecedarian program was a full-day, year-round, educational child care program for children ages birth to five. The program maintained low child-caregiver ratios, provided child-specific curricula and included frequent and regular home visits by a teacher who helped parents provide educational opportunities at home and assisted with employment, referrals, social services, transportation and other aspects of home life likely to impact child well-being.

Follow up studies of Abecedarian children showed that they were less likely to need remedial special education, repeat grades, drop out of high school, or smoke. Researchers also found that mothers of children in the Abecedarian program earned significantly more than mothers in the control group because the stable, high-quality, full-time care provided by the program made it possible for them to obtain employment and additional training. Over a span of 21 years, Abecedarian mothers earned an average $78,750 more than the non-program mothers.\(^4\)

The High/Scope Perry Preschool was a half-day, two-year, intensive public preschool program with low child-to-caregiver ratios, certified teachers and a weekly ninety-minute home visit. Once in the K-12 education system, Perry participants had higher test scores, grades, and high school graduation rates and were less likely than non-participants to need special education or repeat grades. Followed into adulthood, Perry Preschool children had higher rates of employment, earned more, and were less likely to engage in crime or depend on state assistance. The estimated annual rate of return for investments in the Perry Preschool program was 16 percent, 4 percent for participants and 12 percent for society overall.\(^5\)

Two of the three exceptional programs profiled above were small, intensive, well-resourced pilot programs. Reproducing their results at the community, state, or national levels requires large public investments and a systems approach to ECE. Every preschool program cannot offer the scope of services that Perry or Abecedarian did, but, with adequate investments and attention to quality at each step of the continuum, a well-coordinated and adequately resourced ECE system very likely can.

(Recommendations and Conclusions)

High quality early care and education can be a potent antidote to the deleterious developmental impacts of early deprivation and toxic stress. The most effective ECE programs offer comprehensive services, engage parents, and provide consistent care over two or more years. Most of today’s ECE programs are not comprehensive, but close coordination of home visiting, early intervention, child care and pre-K services can enable them to function as a seamless continuum, replicating the benefits of a single all-encompassing program on a scale capable of serving thousands of young children and families.

The ECE continuum provides a variety of economic benefits to individual families and entire communities. In North Carolina, ECE directly or indirectly employs 39,909 and makes it possible for another 66,892 parents of young children to remain employed. Each year, North Carolina’s ECE industry generates or supports over $3.5 billion in economic activity. North Carolina can further increase the economic benefits of its early childhood system by:

1. Expanding access to high quality ECE
   - Increase home visiting capacity
   - Increase the number of full day pre-K slots for 3-and 4-year olds
   - Make quality child care more affordable for working families
     - Expand the child care subsidy programs, and
     - Reinstate the North Carolina Credit for Child Care and Certain Employment-Related Expenses and make it refundable so it can assist the low income families who need it most

2. Enhancing the efficiency and effectiveness of the current ECE system
   - Enhance the coordination of individual ECE services through communication and data sharing
   - Increase access to home visiting and quality child care so their capacity is proportional to that of public pre-K
• Increase the emphasis on quality by educating parents about the benefits and markers of quality care, including information about the importance of quality care in home visiting curricula, and increasing quality incentives for providers.

3. Increasing funding for ECE
• Maximally leverage state investments with local, federal, and private matching funds
• Explore new revenue sources, including public-private partnerships, shared savings programs, and other non-traditional funders

4. Leveraging the demonstrated economic benefits of ECE
• Continue to monitor and report the outcomes of high quality ECE in order to better quantify the annual return on public sector investments
• Explore ways to monetize the economic benefits of ECE to attract private sector investment
• Consider the economic impact of ECE and the extent to which benefits offset costs when determining public sector spending
• Encourage policymakers to regard ECE as economic development and explore the potential for extending state and local economic development incentives to ECE providers

(endnotes)


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- Advising governments, nonprofits, foundations, and other stakeholders on strategies to improve outcomes.
- Sharing knowledge, convening stakeholders, embracing solutions, and accelerating impact.
- Fostering the next generation of leaders.