



Strengthening Illinois Businesses through Investments in Early Care and Education

How Investments in Early Learning
Increase Sales from Local Businesses,
Create Jobs and Grow the Economy

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A report by:  **AMERICA'S EDGE**
Strengthening Businesses Through Proven Investments in Kids



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Who We Are

The business leaders of AMERICA'S EDGE take a critical look at the knowledge, skills and abilities businesses need their employees to have in the 21st century, including the ability to be communicators, collaborators and critical thinkers. Using that analysis, we educate policy-makers and the public about high-quality, proven investments that strengthen businesses, establish a foundation for sustained economic growth, and protect America's competitive edge in a global market place, while helping our nation's children get on the right track.

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Executive Summary

How Early Learning Investments Can Help Expand

Illinois' Economy

Illinois business leaders recognize that the key to jump-starting the state's economy and keeping struggling companies in business is to generate additional sales of local goods and services, while also creating new jobs. That is why, after taking a hard look at the research and calculating proven returns on investment, Illinois business leaders are calling on state and federal policy-makers to invest in early care and education. This report documents that investments in early learning provide a significant, immediate economic boost for local businesses and help build stronger communities over the long term.

Fully investing in early care and education would generate billions of dollars in sales of goods and services for Illinois businesses and create tens of thousands of jobs in the state. In fact, investments in quality early learning generate more new spending for local businesses than investments in eight other major economic sectors. For every \$1 invested in early care and education in Illinois, an additional \$1.17 is generated for a total of \$2.17 in new spending in the state. This strong economic boost for local businesses is higher than investments in other major sectors such as transportation, construction, wholesale trade, retail trade and manufacturing. Inversely, cuts to state early learning programs would hurt local businesses in Illinois by eliminating \$1.17 in additional new spending for every \$1 cut.

Early care and education should be a critical component of Illinois' economic recovery. To provide increased access to quality early care and education in keeping with Illinois' Preschool for All plan, while also expanding access to Illinois' youngest children from birth through age two, would require an investment of an additional \$1.2 billion. That investment would generate \$2.6 billion in total new spending in the Illinois economy. And nearly all of these dollars generated in Illinois would stay in Illinois – helping local businesses prosper while also creating up to 39,000 new jobs, including 9,000 jobs outside the early learning sector.

Such an investment will also save Illinois businesses money every day through reduced absenteeism and turnover. The average

working parent in America misses five to nine days of work per year because of child care problems. This costs U.S. businesses \$3 billion a year. Research confirms that if parents have quality early care and education available in their communities, not only will absenteeism and turnover go down, but productivity will also go up – immediately improving businesses' bottom lines.

Yet another strategic reason for this investment is that access to quality early care and education will increase the ability of Illinois businesses to attract skilled employees. Quality programs for our youngest children are needed for the same reasons communities strive to have a strong K-12 education system to attract skilled workers and new businesses. Sixty percent of new jobs in the early 21st century will require skills possessed by only 20 percent of the current workforce. As our economy begins to turn around, Illinois businesses need the right resources to attract and retain the best workers. One resource that can help communities attract the best employees is the availability of quality early learning for their children.

Finally, such an investment will establish a foundation for sustained economic growth because quality early learning is key to ensuring that future employees have the 21st century skills Illinois businesses need. To remain competitive in a global marketplace, businesses need communicators, collaborators and critical thinkers. Research confirms that quality early learning is the crucial first step in the development of those skills. And research shows that the return on investment is impressive: Studies of high-quality early education programs for at-risk children have shown that quality programs can save as much as \$16 for every dollar invested.

The bottom line: With limited funds available to help businesses and our economy get back and stay on track, few investments make as much sense for Illinois businesses' balance sheets as do investments in high-quality early care and education.

Strengthening Illinois Businesses through Investments in Early Care and Education

Immediate Short-Term Economic Gains

Critical Issues for Illinois Businesses

Even in today's tough economy, many businesses are experiencing a short supply of employees with 21st century skills in large part because high school and college graduates lack the knowledge and abilities businesses need.¹ Consider these facts. In Illinois:

- 25 percent of high school students do not graduate on time;²
- 67 percent of eighth graders are below grade level in math;³ and
- 67 percent of fourth graders read below grade level.⁴

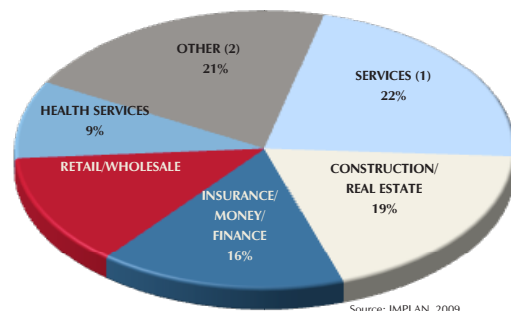
Nationally, 60 percent of three- to five-year-olds do not have the basic skills needed to enter kindergarten, such as counting to ten and recognizing letters in the alphabet.⁵

Each year, dropping out costs the United States dearly in lost productivity. In fact, high school dropouts are so much less productive than high school graduates that each class of dropouts will make \$335 billion less over their lifetime than they would have as graduates.⁶ That loss of earnings translates into less spending power, lower contribution to the tax base, and decreased productivity.

“The research is clear that investments in quality early learning programs pack a big punch for our economy – today and tomorrow.”

Monica J. Bristow,
President, River Bend Growth Association
Godfrey, IL

Every \$1 spent in Illinois on early learning generates an additional \$1.17 in other sectors of the economy



Source: IMPLAN, 2009

1. Professional, business, information, entertainment, rental, and utility services.

2. Includes a variety of additional smaller economic sectors.

Increasing Sales of Local Goods and Services

New research by AMERICA'S EDGE found that attracting skilled employees, strengthening local and state economies now, and improving businesses' bottom lines can be achieved through cost effective and proven investments in quality early childhood care and education programs.⁷

What economic modeling is the most effective way to determine early education's economic impact in Illinois? This report used IMPLAN, an economic modeling system first developed 18 years ago that is widely used for conducting a variety of economic impact and related analyses, to find the impact. This study employed the most recent available (2009) data sets and IMPLAN models and adheres fully to standard input-output and IMPLAN conventions (see Appendix A for a complete explanation of IMPLAN and the report's methodology).

The early learning sector in Illinois generates more additional spending in the economy than other major economic sectors:

Economic Sectors	Output Multipliers
Early Care and Education¹	\$2.17
Other Major Sectors	
Transportation	\$2.02
Construction	\$2.00
Other	\$1.96
Wholesale Trade	\$1.95
Farm, Forest, Fishing, Hunting	\$1.86
Manufacturing	\$1.83
Retail Trade	\$1.81
Mining Oil Gas	\$1.72
Utilities	\$1.59
1. The early care and education sector is part of the larger services sector, which on average generates a multiplier of \$1.98 for every \$1 invested.	
Source: IMPLAN, 2009 analysis of Type SAM Output Multipliers for Illinois	

Every \$1 invested in the early learning sector generates an additional \$1.17 in the local economy.

This economic impact modeling system found that, for every additional \$1 invested in early care and education in Illinois, \$2.17 is generated in total spending within the state. This strong economic boost for local businesses is higher than investments in other major sectors such as transportation (\$2.02), construction (\$2.00), wholesale trade (\$1.95), retail trade (\$1.81) and manufacturing (\$1.83).⁸ Research shows that among Illinois’ major economic sectors that will spur economic growth, early care and education offers one of the smartest ways to create additional buying power for consumers and help local companies stay in business.

To provide increased access to quality early care and education in keeping with Illinois’ Preschool for All plan, while also expanding access to Illinois’ youngest children from birth through age two, would require an investment of an additional \$1.2 billion. That investment would yield \$1.4 billion in additional sales in Illinois’ economy outside of early care and education, for a total of \$2.6 billion of new money infused into the state (see Appendix C).⁹ And most of these dollars generated in Illinois would stay in Illinois – helping local businesses improve sales in almost

every sector. Here are some examples of the economic impact that investing in early learning would have on the major economic sectors in Illinois:

- **Approximately \$307 million in new sales in the state’s services sector**, which employs the majority of workers in Illinois. The additional dollars would benefit many small businesses including dry cleaners, mobile phone and cable companies, and numerous professional firms such as accounting, law and tax offices.¹⁰

“Studies show that early education programs have one of the best long-term returns on investment –up to \$16 for every \$1 invested. You would be hard pressed to find any program with that kind of payoff.”

**Jeffrey Cribbs,
President, Chicago Wealth Management Inc.
Chicago, IL**

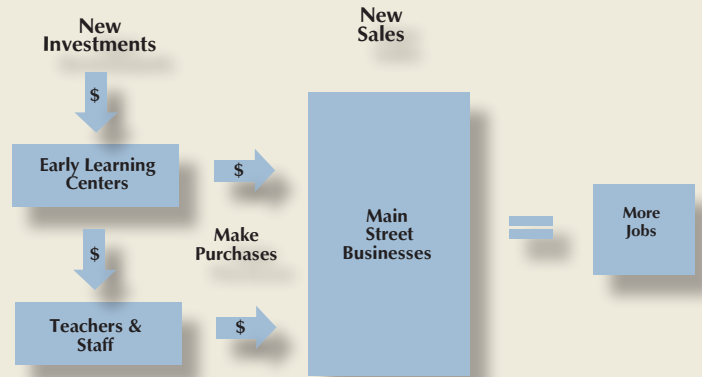
Early Learning Spending Stays in Illinois

Here's how it works:

The dollars initially invested in an early learning program re-circulate through the local economy. The first dollar of spending goes directly to early care and education programs, and the additional spending is generated in two ways: (1) when early learning centers purchase local goods and services to operate their programs; and (2) when early learning teachers and staff spend their wages on local goods and services. All this additional spending is generated through what is known as the “multiplier effect.”

Although every industry generates some additional spending in these two ways (see table on page 2 for a comparison of economic output multipliers for different sectors), the early child care and education sector has one of the highest output multipliers because a high proportion of the spending by early learning programs and staff is spent locally. Much of the investment in early education goes to teacher wages, and the person-to-person nature of this service means that it must be provided and delivered locally. This is different from many industries that are based on products that could be manufactured outside of Illinois or on services that can be provided remotely (e.g., customer service representatives via phone lines from other states or even internationally).

How Early Learning Investments Help Illinois Businesses



In turn, since early education teachers and staff are low- and moderate-wage workers (child care workers have median annual incomes of \$17,440)¹⁹ they typically spend rather than save their wages, purchasing local goods and services, including housing and retail products.

Here's what this means in actual dollars and cents: Every dollar spent on early care and education in Illinois yields a total of \$2.17 in the state economy.²⁰

- **Approximately \$271 million in new sales in real estate and construction** – providing a boost to the slumping real estate market and helping many low- and middle-income families keep up with their mortgage or rental payments.¹¹
- **Approximately \$227 million in new dollars to Illinois' insurance and finance sectors**, including local banks and insurance companies.¹²
- **Approximately \$177 million in new sales in Illinois' retail and wholesale trade sectors**, including grocery stores, department stores, and auto dealers.¹³

The \$1.4 billion in additional spending outside of early care and education will be generated in over 400 economic categories. Of those 400-plus categories, here are just a few concrete examples of increased sales for Illinois businesses:

- Over \$61 million in sales at local restaurants, the cost for over 18,000 households of four to eat out for one year;¹⁴
- Over \$25 million in sales from local electric companies, the cost of monthly electric bills for over 15,000 families of four;¹⁵
- Over \$11 million in sales from local supermarkets, the cost of a year of groceries for over 2,300 families of four;¹⁶
- Over \$19 million in sales from gasoline stations and petroleum refineries, the cost, for example, for over 7,500 families to pay for gasoline for an entire year.¹⁷
- Over \$8 million in sales from local car and automobile parts dealers, the cost, for example, for over 400 families to get a new compact car.¹⁸

“Basic skills training should not be part of my balance sheet.”

Cindy Warke,
Executive Director, Gateway Center
Collinsville, IL

The key point is that investments in the early learning sector are very competitive with investments in other major sectors, and these investments create an immediate infusion of dollars throughout Illinois' local businesses.

39,000 New Jobs in Illinois

Fully investing in early care and education would also create tens of thousands of new jobs. For every three jobs created in the early care and education sector, one job is created outside that sector in Illinois' economy.²¹

An analysis of the IMPLAN economic data for Illinois shows that a \$1.2 billion investment providing increased access to quality early care and education in keeping with Illinois' Preschool for All plan, while also expanding access to Illinois' youngest children from birth through age two, would create up to 39,000 new jobs, including 9,000 new jobs in other economic sectors.²² These additional jobs are created when expanded early learning programs and their employees purchase additional local goods and services. As demand for goods increases, so does the need to supply those goods, which creates jobs.

Thus, investment in early learning, with the increased spending power from newly employed individuals, would help Illinois continue to reduce its unemployment rate and immediately strengthen local businesses.

The Perry Preschool Program

One of the best studies of early care and education for three- and four-year-olds, the High/Scope Perry Preschool Program in Ypsilanti, Michigan, followed the children who attended the preschool until they were age 40. From 1962 through 1967, preschool teachers worked intensively with low-income children ages three and four. The children attended preschool during the week and teachers came to their homes once a week to coach their parents. When the children were age 40, researchers compared their life stories with those who did not participate in the early education program. The payoff was impressive. Children who participated in the preschool program had significantly higher reading achievement and arithmetic achievement scores at age 14 compared to the children not participating in the program; 44 percent more of the children in the Perry program graduated from high school; and 60 percent of participants were earning upward of \$20,000 a year in their forties, versus 40 percent of those in the control group.³⁸

Cuts to Early Learning Hurt Businesses

In the same way that investments in early learning generate additional spending in Illinois due to the multiplier effect, the reverse is also true: funding cuts to early learning programs also reduce sales from Illinois businesses.

Thus, for every \$1 cut from early learning programs, an additional \$1.17 will be lost in sales of local goods and services.²⁷ Illinois cannot afford cuts to early learning that will directly hurt the bottom lines of Illinois businesses.

Cost Savings and Increased Productivity for Businesses

Quality early learning saves businesses money through reduced absenteeism and turnover. The average working parent in America misses five to nine days of work, or one to two weeks per year, because of child care problems. In fact, according to a study published by Cornell University, this problem costs U.S. businesses \$3 billion every year.²³ Research confirms that if parents have quality early care and education available in their communities, not only will absenteeism and turnover go down, but retention and productivity will also go up.²⁴ Reduced absenteeism and turnover and increased retention and productivity translate into immediate savings and increased profits for businesses—good news to Illinois businesses on both sides of their balance sheets.

Attracting Skilled Employees

Even in tough economic times, businesses often struggle to attract qualified applicants to fill skilled positions. Having access to quality early care and education services currently helps hundreds of thousands of parents stay in the workforce in Illinois.²⁵ However, approximately 500,000 children under five in Illinois do not participate in regulated early care and education programs, and a significant number would likely participate if high-quality, affordable programs were available in their neighborhoods.²⁶ Like strong K-12 education systems, quality early education for our youngest children can help attract skilled workers and new businesses. Illinois businesses must be poised to compete for the most skilled workers as the economy begins to recover.

Early Care and Education in Illinois: An Economic Snapshot

Early care and education programs serve young children from birth through age 5. These programs take several forms, including child care centers and family child care homes, private preschool programs, and publicly funded and regulated early education programs including public Pre-Kindergarten, Head Start, and early childhood special education programs provided by the public schools. In Illinois, approximately 500,000 young children under age 5 are not served by regulated early care and education settings.³⁹

Early care and education is an important economic sector in Illinois, making significant contributions to the local economy:

- Early care and education programs represent a sizable

small business sector in the state, with more than 2,800 licensed early care and education centers and more than 13,000 licensed family homes.⁴⁰

- There are nearly 56,000 full-time workers in the early care and education sector in the state, including teachers, assistants and staff.⁴¹
- The early care and education sector generates \$2.1 billion dollars annually in Illinois, including both public investments and parent fees.⁴²
- Over 650,000 workers in Illinois, or one in ten workers in the state, has a child under age 6.⁴³

Long-Term Benefits for Economic Security

In addition to jump-starting Illinois' economy and creating tens of thousands of new jobs, major investments in quality early learning programs would also have important long-term benefits that would establish a foundation for sustained economic growth.

To remain competitive in the global marketplace, businesses need employees with hard skills (math, reading, and writing) and soft skills (communication, collaboration and critical thinking). But employers are experiencing a significant shortage of workers with the skills they need.

According to a 2006 survey, less than a quarter of employers (only 23.9 percent) report that new entrants with four-year college degrees have "excellent" basic knowledge and applied skills, and significant deficiencies exist among entrants at every level.²⁸ The deficiencies are greatest with high school graduates: 42.4 percent of employers report the overall preparation of high school graduates as deficient; 80.9 percent report deficiencies in written communications; 70.3 percent report deficiencies in professionalism; and 69.6 percent report deficiencies in critical thinking.²⁹ Although preparedness increases with education level, employers note significant deficiencies remaining among graduates of the four-year colleges in written communications

(27.8 percent), leadership (23.8 percent), and professionalism (18.6 percent).³⁰

High-quality early care and education is a critical step to support the development of the 21st century skills that businesses require in their workforce. Research studies demonstrate that children who participate in high-quality early learning can do better on a range of outcomes. Here are examples of what outcomes are impacted and what is possible:

- **Better preparation to succeed in elementary school** – for example, children exposed to one year of Oklahoma's universal pre-kindergarten program experienced a 16 percent increase in their overall test score;³¹
- **Less special education** – children who attended the Chicago Child-Parent Centers (CPC) program were 40 percent less likely to need special education;³²
- **Lower rates of retention in school** – children participating in the Abecedarian early education program were 43 percent less likely to be held back in school;³³
- **Higher rates of high school graduation** – children attending the Perry program were 44 percent more likely to graduate from high school;³⁴

- **Less crime** – children not offered the Perry program were five times more likely to become chronic offenders by age 27;³⁵ and
- **Higher rates of employment** – children in Perry were 22% more likely to be employed at age 40.³⁶

Studies of high-quality early education programs for at-risk children have shown that these programs can save as much as \$16 for every dollar invested.³⁷ These long-term benefits are realized when the children who receive high-quality early learning grow up and become better educated and more productive workers, with far less remedial education or criminal costs to society. That is a return on investment that cannot be matched by almost any other public investment.

Conclusion

Research is clear that investments in high-quality early care and education will help jump-start our economy through an immediate increase in sales for Illinois businesses and the creation of many new jobs. At the same time, we will be building the skills of our future workforce. Policy-makers must make difficult decisions about where to invest limited funds as revenues have decreased during the recession. Funding for early care and education should be a priority since it is one of the best ways we can immediately strengthen our economy while creating lasting economic security.

“The four-year-olds of today are the workforce of tomorrow. Every child who enters the workforce with the skills American businesses need will help our nation stay competitive in an increasingly challenging global marketplace.”

**David Bartz,
President, Lemont Chamber of Commerce
Financial Advisor, Edward Jones Investments
Lemont, IL**

Appendix A

Economists have documented the contributions that the early care and education sector makes to the economy in the short term through economic multiplier effects.

The short-term economic development benefits of the early child care and education sector are based on estimates calculated from what are called input-output economic models. These models show the linkages between all sectors in the economy, creating a matrix detailing how spending in each sector ripples through other economic sectors via the purchases of goods and services from other sectors.

There are three types of economic linkage effects that this input-output analysis captures. Direct effects of new spending in the child care sector are seen within the sector itself, through new money spent on child care programs. Indirect effects reflect the inter-industry expenditures generated when child care businesses purchase goods and services from other sectors. These businesses, in turn, are stimulated to increase their input purchases, and so on in widening ripple effects throughout the economy. Induced effects reflect similar economy-wide impacts due to the increased spending on goods and services of early education workers as first their wages increase, and then the wages of workers in other affected industries increase. The combined linkage effect of indirect (inter-industry spending) and induced (household spending) is called a Type SAM multiplier.

Early learning investments generate new dollars and jobs throughout Illinois' economy. Every new dollar spent on early learning yields a total of \$2.17 in the state economy.

AMERICA'S EDGE commissioned an analysis of the most recent available data for Illinois on the economic impact of the early care and education sector on other sectors.

All input-output modeling results were generated using the Minnesota IMPLAN Group, Inc (MIG, Inc) IMPLAN® economic impact modeling system. First developed in 1993, the system now is in widespread use for conducting a wide variety of economic impact and related analyses.

This study employed the most recently available (2009) data sets and IMPLAN models. One model was created for Illinois. Our modeling approach and analyses adhere fully to standard input-output and IMPLAN conventions.

Multipliers were generated for the model using two separate sets of assumptions about regional purchase coefficients (RPC), or the proportion of purchases in each sector that occur regionally (locally). First, the multipliers were generated based

on estimates from MIG, Inc.'s recently-completed National Trade Flow Model. Second, in order to facilitate comparison with earlier IMPLAN modeling work, multipliers were also generated based on the previous IMPLAN standard for RPC estimates, namely an econometric model.

The reported results are based on fully disaggregated models (i.e. 440 distinct sectors). The disaggregated sectors are defined by MIG, inc. but are based upon and cross-walked with the North American Industrial Classification System (NAICS), which several years ago replaced the Standard Industrial Classification (SIC) code system. Additional analysis was also conducted using models we aggregated into a small number of very broad sectors (e.g. Agriculture, Manufacturing, Services, etc.).

To illustrate the impact of increased spending on early learning, we used the models created to estimate the indirect and induced effects on each sector of the economy of exogenous increases (e.g. of a \$1,000,000 base investment) in the demand for child care services. Because government spending is determined as much by policy decisions as by the regional dynamics of economic forces, government spending is conventionally treated as a source of exogenous demand. We focus on this source.

For additional information and background on input-output analyses of the early care and education sector, see the following resources:

Zhilin, L., Ribeiro, R., & Warner, M. (2004). Child care multipliers: Analysis from fifty states. Linking Economic Development and Child Care Research Project. Ithaca, NY: Cornell University, Cornell Cooperative Extension. Retrieved from <http://government.cce.cornell.edu/doc/pdf/50StatesBrochure.pdf>

Zhilin, L., Ribeiro, R., & Warner, M. (2004). Comparing child care multipliers in the regional economy: Analysis from 50 states. Linking Economic Development and Child Care Research Project. Ithaca, NY: Cornell University, Cornell Cooperative Extension. Retrieved from <http://government.cce.cornell.edu/doc/pdf/50States.pdf>

Appendix B

New spending generated by early care and education investments

Selected major counties/regions of Illinois

Location	Percent of children under five relative to state	Total new early care and education investments to serve unmet need from birth to five	Total new spending generated in the economy	Total new spending generated outside the early care and education sector	Spending by Major Sector			
					Services (22%)	Real estate and construction (19%)	Insurance and finance (16%)	Retail and wholesale (13%)
Illinois	100%	\$1.2 billion	\$2.6 billion	\$1.4 billion	\$307 million	\$271 million	\$227 million	\$177 million
Chicago								
Cook County	43%	\$516 million	\$1.1 billion	\$602 million	\$132 million	\$117 million	\$98 million	\$76 million
Chicago Metro Area*	25%	\$300 million	\$650 million	\$350 million	\$77 million	\$68 million	\$57 million	\$44 million
Madison/St. Clair Counties	4%	\$48 million	\$104 million	\$56 million	\$12 million	\$10.8 million	\$9.1 million	\$7.1 million
Peoria County	1%	\$12 million	\$26 million	\$14 million	\$3.1 million	\$2.7 million	\$2.3 million	\$1.8 million
Adams County	>1%	\$5.9 million	\$12.7 million	\$6.9 million	\$1.5 million	\$1.3 million	\$1.1 million	\$870 thousand

Note: Values may not be precisely equivalent to percentages due to rounding

*Surrounding Chicago Metro area includes DuPage, Kane, Lake, McHenry, and Will counties.

Sources: IMPLAN, 2011, using 2009 Illinois data and statewide IMPLAN models; American Community Survey data on total children under age 5 by county. Notes: For Illinois, input-output modeling analyses were conducted to identify economic impacts. Illinois' Type SAM output multiplier was 2.17. For counties and metro areas, the figures above represent a proportional estimate of the statewide economic impact, estimated based on the proportion of children under 5 in those locations.

Appendix C

AMERICA'S EDGE estimates that \$1.2 billion in new early care and education investments are needed in Illinois to serve an additional 150,000 young children from birth through age four currently unserved by these programs.

Goals for providing high-quality early learning to Illinois children

AMERICA'S EDGE supports the goal laid out in Illinois' Preschool for All plan that 60% of all 4-year-olds be served by high-quality early care and education programs, and that 50% of all younger children (from birth through age 3) be served by high-quality early care and education programs. While some states have proposed and implemented higher participation rates in early learning programs – Oklahoma, the national leader on access to early learning programs, serves 71% of its 4-year-olds with pre-k, and serves 87% of its 4-year-olds with pre-k, Head Start, or early childhood special education programs – the Preschool for All plan provides a realistic short-term goal for increased access to early learning in Illinois.

The Preschool for All Plan was developed by the Illinois Early Learning Council, established in 2003 by the Governor and the Illinois General Assembly and comprised of gubernatorial and legislative appointees who serve on a voluntary, unpaid basis to plan a comprehensive statewide early learning system. This Preschool for All plan set the goal for 3- and 4-year-olds while acknowledging the need for increased support for younger children. For the purposes of this estimate, AMERICA'S EDGE has extended the goal for three-year-olds to younger children as well. To serve 60% of all 4-year-olds (60% of 180,715 children, or 108,429 children) and 50% of all 3-year-olds (50% of 177,584 children, or 88,792 children), 2-year-olds (50% of 178,790 children, or 89,395 children), 1-year-olds (50% of 180,178 children, or 90,089 children), and children under age 1 (50% of 181,010 children, or 90,505 children) yields a total of 467,210 children under age 5 who need to be served by high-quality early learning programs to reach this goal. Illinois Early Childhood Asset Map. (2010). Population (2005 estimates). Champaign, IL: University of Illinois. Retrieved on April 27, 2010 from <http://iecam.crc.uiuc.edu/>; Barnett, W.S., Epstein, D.J., Friedman, A.H., Sansanelli, R.A. & Hustedt, J.T. (2009). The state of preschool 2009: State preschool yearbook. New Brunswick, NJ: National Institute for Early Education Research.

Economic multipliers calculations for new investments needed

The \$2.6 billion estimate of the total new spending generated in Illinois' economy from \$1.2 billion in new early care and education spending was calculated by taking the Type SAM Output multiplier

for Illinois, \$2.17, and multiplying it by the \$1.2 billion, which yields \$2.6 billion in new spending. This new spending includes the \$1.2 billion new direct spending in the early care and education sector, plus the new indirect and induced spending (with a subtotal of \$1.4 billion) which ripple out to other sectors of Pennsylvania's economy, yielding \$2.6 billion in new total spending.

Estimates of current capacity in early care and education programs

In Illinois, there are an estimated 898,000 children (898,277) under age five living in families. Illinois Early Childhood Asset Map. (2010). Population (2005 estimates). Champaign, IL: University of Illinois. Retrieved on April 27, 2010 from <http://iecam.crc.uiuc.edu/>. To estimate the number of children under age five in regulated early care and education programs, AMERICA'S EDGE obtained recently available figures from state data sources documenting enrollment in the various early care and education programs.

AMERICA'S EDGE was able to obtain estimates of program capacity or enrollment for each major type of early care and education program available to children and families in Illinois.

Pre-kindergarten: 95,300 children were enrolled in the Illinois State Board of Education (ISBE) pre-k program in 2009. Illinois Early Childhood Asset Map. (2010). ISBE Prek/PFA (FY 2009). Champaign, IL: University of Illinois. Retrieved on April 26, 2010 from <http://iecam.crc.uiuc.edu/>

Head Start: 36,438 children were enrolled in Head Start programs in Illinois, based on May 2006 funded enrollment data. Illinois Early Childhood Asset Map. (2010). Head Start (FY 2006). Champaign, IL: University of Illinois. Retrieved on April 26, 2010 from <http://iecam.crc.uiuc.edu/>

Child care centers and family child care homes: The total number of young children in regulated child care programs (which included child care centers or family child care homes) was 204,621 children, based on June 2007 state data from the Illinois Network of Child Care Resource and Referral Agencies (INCCRRA) and from Illinois Action for Children for Chicago and Cook County. This figure was calculated by adding the total number of children from birth to age 2 in centers (58,233 children) and the number of children aged 3 through kindergarten in centers (101,380 children), along with the number of children from birth to age 2 in licensed family child care homes (24,864 children) and the number of preschoolers in licensed family child care homes (20,144 children). Illinois Action for Children. (2007). Child care and early education programs. Chicago, IL: Author. Retrieved on April 27, 2010 from

http://www.actforchildren.org/_uploads/documents/live/2007_Child_Care_and_Early_Education_Programs_.pdf

Family, friend, and neighbor care: Additional children participate in family friend and neighbor care arrangements, but the informal, unregulated nature of these early care arrangements makes them very difficult to document, and they are not included in this count, except for those family, friend or neighbor care arrangements for which families are receiving child care assistance. 32,807 children age 5 and under were served by family, friend and neighbor care and also received child care assistance for this care. This figure was calculated first for children from birth to age 2 by multiplying the number of children age 0-2 receiving child care assistance (46,278 children) by the percentage of children who are in family, friend, and neighbor care (35%), yielding 16,197 children. And for children aged 3-5, this figure was calculated by multiplying the number of children age 3-5 receiving child care assistance (51,906 children) by the percentage of children who are in family, friend, and neighbor care (32%), yielding 16,610 children. Illinois Action for Children. (2007). Children eligible for Illinois child care assistance. Chicago, IL: Author. Retrieved on April 27, 2010 from http://www.actforchildren.org/_uploads/documents/live/2007_Children_Eligible_for_Child_Care_Assistance.pdf; Illinois Action for Children. (2007). Child care in the homes of family, friends or neighbors (2007). Chicago, IL: Author. Retrieved on April 27, 2010 from http://www.actforchildren.org/_uploads/documents/live/2007_Family_Friend_and_Neighbor_Child_Care.pdf

Private preschool programs: There were 33,052 spaces for children in private preschool programs in Illinois, based on June 2007 Child Care Resource and Referral Agency data. Illinois Action for Children. (2007). Child care and early education programs (2007). Chicago, IL: Author. Retrieved on April 27, 2010 from http://www.actforchildren.org/_uploads/documents/live/2007_Child_Care_and_Early_Education_Program.pdf

Several of the early care and education program enrollment estimates include a small number of 5-year-old children, but since a majority of 5-year-old children are in kindergarten rather than in early care and education as their primary daily educational setting, we compared early care and education enrollment for young children (up through age 4 and also including a small number of 5-year-olds) to statewide population estimates for children ages 4 and under, which provides a more conservative estimate of the unmet need for early care and education programs.

AMERICA'S EDGE estimates that the total number of young children served by early care and education programs in Illinois is 319,823 children. This estimate totals the number of children served by

the early care and education programs detailed above, and adjusts for the potential for duplicated counts for individual children enrolled in more than one early childhood education setting (pre-K and child care, for example) by adjusting the half-day programs estimates (for pre-K, Head Start, and private preschool) downward by 50 percent, which assumes that 50 percent of these children were also enrolled in another early childhood education program. Subtracting this estimate of the number of children being served (319,823 children) from the proposed number of children to be served to reach the goal of serving 60 percent of all 4-year-olds and 50 percent of all younger children from birth through age 3 (467,210 children) yields 147,387 children, or approximately 150,000 children not being served who would need to be served to reach this goal (Program data documenting the number of children enrolled in multiple early learning programs were not available; improved early learning data systems that track individual children's participation in multiple programs would provide useful data to develop more precise estimates across the whole early learning sector).

Calculations for per-child and total costs for early care and education investments

Illinois Action for Children's 2005 report on the economic impact of the early care and education industry in Illinois calculated \$2.12 billion in early care and education gross receipts in Illinois. Using this figure, AMERICA'S EDGE calculated an average gross receipts per-child expense of approximately \$8,000 (\$8,067, rounded to \$8,000) by dividing the gross receipts figure by the number of children in regulated care estimated in that report (262,811 children) and used this as a proxy measure of additional per-child costs for serving additional children with ECE programs in Illinois. Multiplying this gross receipts per-child expense (\$8,000) by the total number of new children to be served to reach 60 percent of all 4-year-olds and 50 percent of all young children from birth through age 3, which is an additional 150,000 children (147,387 children, rounded to 150,000), yields an estimated \$1.2 billion in new early care and education spending needed. Alexander, D., Cahn, S., Slaughter, S., & Traill, S. (2005). The economic impact of the early care and education industry in Illinois. Chicago: Chicago Metropolis 2020. Retrieved April 15, 2010 from <http://www.chicagometropolis2020.org/documents/FullEISStudy.pdf>

Endnotes

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- 8 High-quality early care and education programs include the following essential features: skilled teachers with appropriate compensation, comprehensive and age-appropriate curricula, strong family involvement, small staff-to-child ratios to ensure that each child gets sufficient attention, small, age-appropriate class sizes, and screening and referral services for developmental, health, or behavior problems. Several studies show that high-quality early care and education teachers have at least a four-year degree, partake in on-going training, and are paid well. Whitebook, M. (2003). *Early education quality: Higher teacher qualifications for better learning environments—A review of the literature*. Berkeley, CA: Institute of Industrial Relations. Retrieved on February 25, 2010 from <http://iir.berkeley.edu/ccscc/pdf/teacher.pdf>; Katz, L. (1999). *Curriculum disputes in early childhood education*. Champaign, IL: Clearinghouse on Early Education and Parenting. Retrieved on February 25, 2010 from http://ceep.uiuc.edu/early_care_and_educationarchive/digests/1999/katz99b.html; Goffin, S. G., & Wilson, C. (2001). *Curriculum models and early childhood education: Appraising the relationship* (2nd ed.). Upper Saddle River, NJ: Merrill/Prentice Hall; Some examples of a strong parent-involvement component include the home visits in the High/Scope Perry Pre-kindergarten and Syracuse University Family Development programs, the intensive parent coaching in Chicago Child-Parent Centers, and the parent volunteers in Head Start. For Perry Pre-kindergarten see: Schweinhart, L. J., Barnes, H. V., & Weikart, D. P. (1993). *Significant benefits: The High/Scope Perry Pre-kindergarten study through age 27*. Ypsilanti, MI: High/Scope Press. See also D. R. Powell (Ed.). (1988). *Parent education as early childhood intervention: Emerging directions in theory, research, and practice* (pp. 79-104). Norwood, NJ: Ablex Publishing. For preschool classrooms, the staff-to-child ratio should be not more than 10 children per teacher. In early learning settings for infants, the child-staff ratio should be not more than three children per teacher, and for toddlers, not more than four children per teacher. American Academy of Pediatrics, American Public Health Association, and National Resource Center for Health and Safety in Child Care and Early Education (2002). *Caring for Our Children: National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care Programs, 2nd edition*. Elk Grove Village, IL: American Academy of Pediatrics and Washington, DC: American Public Health Association; Barnett, W.S., Epstein, D.J., Friedman, D.J., Boyd, J.S., & Hustedt, J.T. (2008). *The state of preschool 2008: State preschool yearbook*. New Brunswick, NJ: National Institute of Early Education Research; Dunkle, M., & Vismara, L. (2004). *Developmental checkups: They're good, they're cheap and they're almost never done. What's wrong with this picture?* Retrieved on February 25, 2010 from <http://www.child-autism-parent-cafe.com/child-development.html>
- 9 AMERICA'S EDGE commissioned an analysis of the linkage effects of early care and education. Analyses were conducted using fully disaggregated models and using models aggregated into nine very broad sectors. This analysis calculated the Type SAM (Social Accounting Matrix) Output multipliers for all nine major aggregated economic sectors in the state using IMPLAN models. The analysis was conducted on 2009 data, the most recently available data set for Illinois. The early care and education sector's Type SAM output multiplier for Illinois was \$2.17. See table in report for Type SAM output multipliers of each sector analyzed. See Appendix A, Economic Multipliers Analysis, for more details on analysis and methods.
- 10 AMERICA'S EDGE estimates that \$1.2 billion in new early care and education investments are needed in Illinois to serve an additional 150,000 young children from birth through age four currently unserved by these programs. See appendix C for calculations of new early care and education investments in Illinois.
- 11 The services sector includes professional, business, information, entertainment, rental, and utility services. It represented 22 percent of the new spending generated outside the early care and education sector. The \$307 million figure was calculated by taking 22 percent of \$1.4 billion, which is the amount of the total \$2.6 billion in new spending that is generated outside the early care and education sector (the first \$1.2 billion dollars invested is spent directly, in the early care and education sector).
- 12 The real estate and construction sectors represented 19 percent of the new spending gener-
- ated outside the early care and education sector. The \$271 million figure was calculated by taking 19 percent of \$1.4 billion, which is the amount of the total \$2.6 billion in new spending that is generated outside the early care and education sector. These numbers illustrate how far the \$271 million figure could go in terms of mortgage payments. Housing sector economic demand included real estate and construction industry spending due to early care and education sector spending.
- 13 The insurance and finance sectors represented 16 percent of the new spending generated outside the early care and education sector. The \$227 million figure was calculated by taking 16 percent of \$1.4 billion, which is the amount of the total \$2.6 billion in new spending that is generated outside the early care and education sector.
- 14 The retail and wholesale trade sectors represented 13 percent of the new spending generated outside the early care and education sector. The \$177 million figure was calculated by taking 13 percent of \$1.4 billion, which is the amount of the total \$2.6 billion in new spending that is generated outside the early care and education sector.
- 15 Based on input-output analysis using fully disaggregated IMPLAN models with 440 distinct economic sectors in the 2009 Illinois model. See Appendix A, Economic Multipliers Analysis, for more details on analysis and methods. Bureau of Labor Statistics. (2011). *Consumer Expenditure Survey*. Washington, DC: U.S. Department of Labor. Retrieved on February 18, 2011 from <http://www.bls.gov/cex/>. The national figure for yearly out-of-home food spending is adjusted to reflect lower expenses in the Midwest, using other data from the same Census database.
- 16 Based on input-output analysis using fully disaggregated IMPLAN models with 440 distinct economic sectors in the 2009 Illinois model. See Appendix A, Economic Multipliers Analysis, for more details on analysis and methods. Bureau of Labor Statistics. (2011). *Consumer Expenditure Survey*. Washington, DC: U.S. Department of Labor. Retrieved on February 18, 2011 from <http://www.bls.gov/cex/>. The national figure for yearly electricity spending is adjusted to reflect lower expenses in the Midwest, using other data from the same Census database.
- 17 Based on input-output analysis using fully disaggregated IMPLAN models with 440 distinct economic sectors in the 2009 Illinois model. See Appendix A, Economic Multipliers Analysis, for more details on analysis and methods. The multiplier effects on petroleum refineries and retail gasoline stations were aggregated to total approximately \$19.6 million. Bureau of Labor Statistics. (2011). *Consumer Expenditure Survey*. Washington, DC: U.S. Department of Labor. Retrieved on February 18, 2011 from <http://www.bls.gov/cex/>. The national figure for yearly gasoline and motor oil spending is adjusted to reflect lower expenses in the Midwest, using other data from the same Census database.
- 18 Based on input-output analysis using fully disaggregated IMPLAN models with 440 distinct economic sectors in the 2009 Illinois model. See Appendix A, Economic Multipliers Analysis, for more details on analysis and methods. The estimated cost of a 2011 Ford Focus, including taxes and fees, financing, and insurance is \$19,096. Automotive.com. (2011). *2011 Ford Focus ownership costs*. Bonita Springs, FL: Source Interlink Media. Retrieved on February 18, 2011 from <http://www.automotive.com/2011/12/ford/focus/ownership-costs/index.html>
- 19 Bureau of Labor Statistics. (2008). *Child day care services*. Career Guide To Industries. Washington, DC: U.S. Department of Labor. Retrieved on February 18, 2011 from <http://www.bls.gov/oco/cg/cgs032.htm#earnings>
- 20 AMERICA'S EDGE commissioned an analysis of the linkage effects of early care and education using IMPLAN models. Analyses were conducted using fully disaggregated models and using models aggregated into nine very broad sectors. The analysis was conducted on 2009 data, the most recently available data set for Illinois. The early care and education sector's Type SAM output multiplier for Illinois was \$2.17. See Appendix A, Economic Multipliers Analysis, for more details on analysis and methods. An economist who studies business incentives at the Upjohn Institute for Employment Research, Timothy Bartik, has come up with lower short-term multiplier estimates for early childhood investments than presented in this report, which is based on the original work of Mildred Warner from Cornell University. Bartik's estimates leave out, or value differently, some benefits counted by other economists, and his primary argument is that while federal investments add new money to the state that can stimulate the economy, shifting state tax money from individuals to investments in pre-kindergarten within the state does not provide new money as an input into the state economy. However, Bartik concludes that even if the state were the only source of funding for early education: "There is a net stimulus even once we adjust for the taxes needed to finance early childhood education. ...The spending associated with preschool (with some effects from the child care provided) will immediately boost earnings by about 22 percent of the preschool spending." Bartik also focuses on ways to increase short-term returns from these investments or to defer costs until longer-term benefits far outweigh those costs. So, while there is debate in the economics field over how exactly to count the magnitude of short-term multiplier effects, there is widespread agreement that early education is a very wise investment in our

economic future. Bartik, T. J. (2011). *Investing in Kids: Early Childhood Programs and Local Economic Development*. Kalamazoo, MI: W. E. Upjohn Institute for Employment Research. Bartik, T. (2011, January 21). *Early childhood education and the U.S. labor market crisis*. *Preschool Matters*. Retrieved on February 2, 2011 from <http://preschoolmatters.org/2011/01/21/early-childhood-education-and-the-u-s-labor-market-crisis/>

21 The linkage effects of the early care and education sector were analyzed using IMPLAN models for Illinois using 2009 data, the most recently available for the state. The Type SAM employment multiplier for early care and education for Illinois was 1.328. This means that for every three new jobs in the ECE sector, an additional job is created outside that sector in other parts of the state economy.

22 The \$1.2 billion investment in early care and education programs was applied to the 2009 Illinois employment multiplier findings for the ECE sector (with a Type SAM multiplier of 1.328 using IMPLAN), and yielded 39,840 total jobs, or approximately 39,000 jobs), with 9,840 of these jobs (or approximately 9,000 jobs) being in other economic sectors outside early care and education. See Appendix A, Economic Multipliers Analysis, for more details on analysis and methods.

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25 Based on the proportion of children under six in Illinois with both or their only parent in the labor force. U.S. Census Bureau. (2010). *B23008. Age of own children under 18 years in families and subfamilies by living arrangements by employment status of parents*. American Community Survey. Washington, DC: Author. Retrieved on January 12, 2011 from http://factfinder.census.gov/home/saff/main.html?_lang=en&_ts=

26 Although estimates of the number of children participating in regulated early learning programs vary, a conservative estimate suggests that about 500,000 young children under age 5 in Illinois were not in regulated early learning programs. This estimate was calculated by subtracting the total number of young children in early learning programs, 402,218 children, (using the most generous estimate totaling up the number of children from each type of early learning program), from the Census-based population estimates of the number of children under age 5 in Illinois (898,277 children), yielding 496,059, or approximately 500,000 children. The types of early learning programs included in this estimate are: preK, Head Start, private preschool, child care centers and family child care homes, and also those family, friend and neighbor care arrangements for which families receive child care assistance. Note that this estimate was not adjusted for the likelihood that some children participate in more than one program and thus are double-counted. If we used a more conservative estimate which would adjust for the potential for double-counting of some children who participate in more than one early learning program, that more conservative estimate of 319,823 young children served by regulated early learning programs would yield an even higher estimate of the number of young children unserved by regulated early learning programs: approximately 580,000 children. Additional children participate in family friend and neighbor care arrangements, but the informal, unregulated nature of these early care arrangements makes them very difficult to document, and they are not included in this count, except for those family, friend or neighbor care arrangements for which families are receiving child care assistance. (See endnote 6 for a fuller explanation of the number of children served in each type of early learning program in Illinois.) So, in conclusion, while it is likely that the actual figure is even higher, in order to be conservative, we estimate for this report that the about 500,000 young children under age 5 in Illinois were not in regulated early learning programs. Illinois Early Childhood Asset Map. (2010). *Population (2005 estimates)*. Champaign, IL: University of Illinois. Retrieved on April 26, 2010 from <http://iecam.crc.uiuc.edu/>.

27 The additional lost spending to local businesses is calculated by applying the 2.17 Type SAM output multiplier for the early care and education sector in Illinois.

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39 Although estimates of the number of children participating in regulated early learning programs vary, a conservative estimate suggests that about 500,000 young children under age 5 in Illinois were not in regulated early learning programs. This estimate was calculated by subtracting the total number of young children in early learning programs, 402,218 children, (using the most generous estimate totaling up the number of children from each type of early learning program), from the Census-based population estimates of the number of children under age 5 in Illinois (898,277 children), yielding 496,059, or approximately 500,000 children. The types of early learning programs included in this estimate are: preK, Head Start, private preschool, child care centers and family child care homes, and also those family, friend and neighbor care arrangements for which families receive child care assistance. Note that this estimate was not adjusted for the likelihood that some children participate in more than one program and thus are double-counted. If we used a more conservative estimate which would adjust for the potential for double-counting of some children who participate in more than one early learning program, that more conservative estimate of 319,823 young children served by regulated early learning programs would yield an even higher estimate of the number of young children unserved by regulated early learning programs: approximately 580,000 children. Additional children participate in family friend and neighbor care arrangements, but the informal, unregulated nature of these early care arrangements makes them very difficult to document, and they are not included in this count, except for those family, friend or neighbor care arrangements for which families are receiving child care assistance. (See endnote 6 for a fuller explanation of the number of children served in each type of early learning program in Illinois.) So, in conclusion, while it is likely that the actual figure is even higher, in order to be conservative, we estimate for this report that the about 500,000 young children under age 5 in Illinois were not in regulated early learning programs. Illinois Early Childhood Asset Map. (2010). *Population (2005 estimates)*. Champaign, IL: University of Illinois. Retrieved on April 26, 2010 from <http://iecam.crc.uiuc.edu/>.

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