The Economic Impact of the Child Care Industry in Southeast Wisconsin

Public Policy Forum
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ABOUT THE PUBLIC POLICY FORUM

The Milwaukee-based Public Policy Forum – which was established in 1913 as a local government watchdog – is a nonpartisan, nonprofit organization dedicated to enhancing the effectiveness of government and the development of southeastern Wisconsin through objective research of regional public policy issues.

PREFACE AND ACKNOWLEDGMENTS

This report was undertaken to provide citizens and policymakers in the Milwaukee region with a comprehensive understanding of the economic impact of the child care industry in Southeast Wisconsin. We hope that policymakers and community leaders will use the report's findings to inform discussions during upcoming policy debates and deliberations regarding early childhood care and education programs and policies in our region.

Thanks goes to members of our early childhood education advisory committee, who have provided valuable input and advice for this research.

We also wish to acknowledge the funders of this research: the Brico Fund, the Greater Milwaukee Foundation, the Richard and Ethel Herzfeld Foundation, the Faye McBeath Foundation, Rockwell Automation, and the Richard Weiss family foundation, all of Milwaukee, as well as The Buffett Early Childhood Fund of Omaha and The Joyce Foundation of Chicago.

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SECTION 1: EXECUTIVE SUMMARY

The child care industry in southeastern Wisconsin has been thrust into the public spotlight recently due to recent tragedy and scandal. First, an investigative series in the Milwaukee Journal Sentinel in January highlighted fraud and abuse in the taxpayer-financed child care subsidy program, prompting a legislative audit and calls for greatly enhanced regulatory oversight of the system. More recently, in April, the death of a four-month-old Milwaukee infant left unattended in a provider's van produced further calls for enhanced provider scrutiny, and resulted in state legislation to require alarms in all child care vans.

Now that public attention is focused on the dangers and consequences of inadequately regulated child care providers, it is useful to contemplate the nature of the child care industry as a whole. How large is the child care industry in southeast Wisconsin, and what are its characteristics? How important are its economic impacts, and what does that tell us about the potential economic impact of legislative initiatives to stamp out fraud and improve quality?

In the latest report from its three-year research project on early childhood care and education, the Public Policy Forum conducts a comprehensive analysis of the economic impact of southeast Wisconsin's child care industry. The aim is twofold: to provide policymakers and economic development officials with a sense of the economic magnitude of this industry, and what its condition means to the economic well-being of the region; and to lay the groundwork for a follow-up report – to be released later this year – that will enumerate the costs and benefits of a potential high quality early childhood care and education system in southeastern Wisconsin. Taken together, these reports will provide insight for policymakers as to the scope of investments that would be required to achieve a high quality system, and the returns that might be generated should those investments materialize.

Key findings from our analysis of the economic impacts of southeast Wisconsin's child care industry:

- **Southeast Wisconsin's child care industry employs roughly 12,400 people.** The portion of the region's child care industry that is in Milwaukee County employs more people than other Milwaukee County industries such as hotels, food service and drinking places, advertising, food manufacturing, and architecture and engineering-related services. **The child care industry also creates and sustains approximately 7,000 other non-child care jobs in the region** by generating additional employment in related industries.

- The region's child care industry generates an estimated **$661 million in gross receipts annually.** Child care businesses in Milwaukee County gross an estimated $376 million. When compared to the economic impact of other local industries, the portion of the region's child care industry that is in Milwaukee County has larger gross receipts than other Milwaukee County industries like

accommodation (hotels), spectator sports, accounting/tax preparation/bookkeeping, architecture/ engineering/related, advertising/related, furniture stores, and clothing stores.

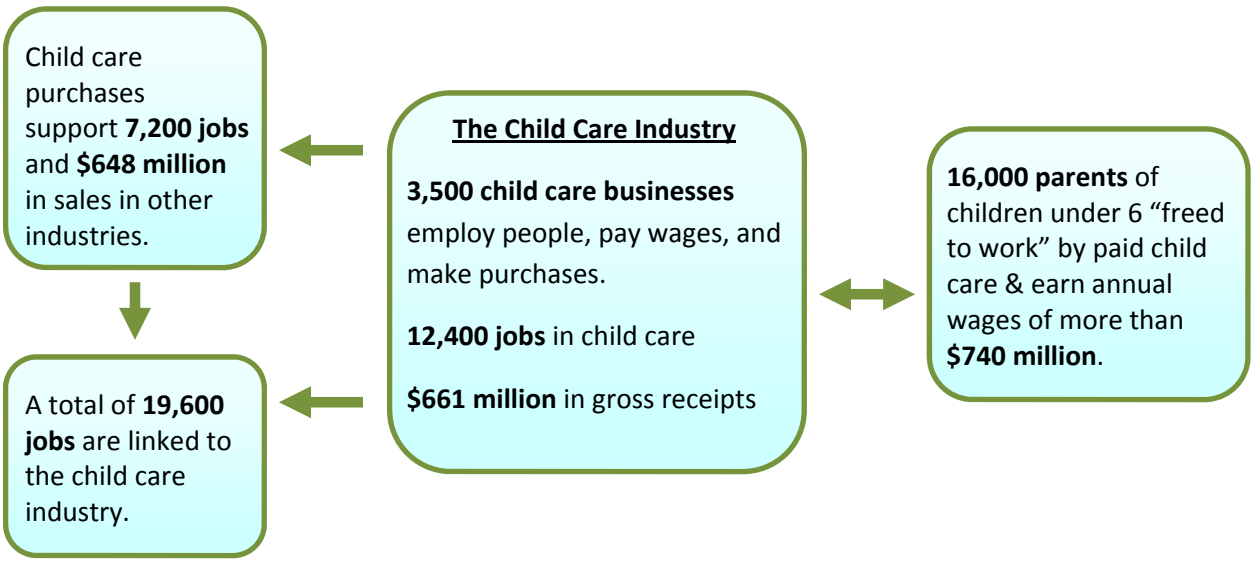
- The full economic impact of the industry across the region takes into account the ripple effects that earnings in one industry have in the rest of the economy. Economic modeling using industry "multiplier" figures suggests that **the child care industry's purchases generate another $648 million in sales in other industries.**

- Southeast Wisconsin's child care industry **frees up an estimated 15,914 parents of children under age 6 for work.** Nationwide, Wisconsin has the 5th-highest rate of children under age 6 with all parents in the labor force. Assuming that each working parent earns roughly the median income for the seven-county region, **these 15,914 working parents in southeast Wisconsin earn an estimated $742 million annually**, a substantial contribution to the region's economic base.

These findings indicate that the child care industry is a significant creator of jobs and economic activity in the region. Furthermore, they suggest that the industry functions as an element of economic infrastructure, meaning it might best be viewed similarly to roads, transit and electricity as a critical infrastructure component that enables people to participate in the workforce and the economy.

In light of this economic importance, policymakers who are considering regulatory changes and/or quality enhancements for the child care system must consider how such initiatives not only will affect providers and children, but also the larger economy that depends on this industry as a vital source of infrastructure and economic activity.

CHILD CARE'S FOOTPRINT ON THE SE WISCONSIN ECONOMY



SECTION 2: INTRODUCTION

Discussions of early childhood care and education usually focus on its social and educational value, and how it helps children and families. More recently, the focus in many states, including Wisconsin, has been on potential investments in child care quality improvements as strategies for improving long-term educational outcomes for disadvantaged youth.

But, in addition to providing important social and educational benefits, child care functions as an economically important industry in its own right. Like other industries, it generates immediate economic benefits in terms of gross receipts and employment. The purchases of child care facility owners and employees create ripple effects across the economy, creating additional economic impact. The child care industry also plays an important role in enabling parents to maintain employment and earnings, thereby further impacting the health of local economies.

This report seeks to quantify the economic impact of the child care industry in southeastern Wisconsin. It is the first of two reports that collectively will serve as the centerpiece of the Public Policy Forum's three-year early childhood education research project. The second report – which will be released later this year – will address the costs of paying for a hypothetical high quality early childhood care and education system in southeastern Wisconsin, and compare those costs to the benefits quantified in this report plus additional benefits derived from a higher quality system. In tandem, the two reports will provide perspective for policymakers regarding the economic impacts of early childhood care and education and the extent to which the benefits of higher quality care may or may not outweigh the public cost of improvements.

The State of Wisconsin currently invests nearly $350 million annually statewide in child care subsidies for low-income families, yet little is known about the impact of that investment, $200 million of which is made in Milwaukee County. This report provides a starting point by analyzing and quantifying the economic impacts currently associated with formal, paid child care (both parent purchased and publicly subsidized) in the southeast Wisconsin region. This baseline information on the importance of the existing child care system to the regional economy not only sets the stage for the Forum's follow-up report, but also hopefully will be of value to policymakers and economic development leaders.

Data and Scope

This report offers a quantitative portrait of the child care industry in the seven southeast Wisconsin counties: Kenosha, Milwaukee, Racine, Ozaukee, Walworth, Washington, and Waukesha. The terms "early childhood care and education" and "child care" are used interchangeably for the purposes of this report. The most current data is used whenever possible, but in other areas, estimates are made, relying on a methodology by Cornell University's Linking Economic Development and Child Care

Research Project[1]. A 2002 report by Marc Levine and Pamela Fendt that focused on the child care industry in Milwaukee County was also a resource in this work.[2]

Two types of regulated[3] child care are included in this report: family care, which is home-based and in Wisconsin can include up to eight children; and center-based or group care, which has higher capacity and does not take place in a residential home. Unregulated or unpaid child care is not included, as data is not available on those arrangements.

Most of the estimates in this report were based on data including all ages of children who use child care, with two exceptions that are outlined in the report. Since data is not available to distinguish those children who use part-time or part-year child care arrangements, full-time and year-round child care usage was assumed.[4]

[1] Ribeiro, Rosaria and Mildred Warner. (2004, January). *Measuring the Regional Economic Importance of Early Care and Education: The Cornell Methodology Guide.* http://government.cce.cornell.edu/doc/pdf/MethodologyGuide.pdf

[2] Levine, Marc and Fendt, Pamela. (2002, September). *The Economic Impact of Child Care in Milwaukee County.* Early Childhood Council of Milwaukee and University of WI-Milwaukee Center for Economic Development. http://www4.uwm.edu/ced/publications/childcare.pdf

[3] Regulated child care is either licensed by the state or certified by the county.

[4] The enrollment estimate was derived from data on provider capacity. Providers could presumably report one slot to account for two or more children who attend part-time.

Quality Matters in Reaping Early Childhood Education's Far-Reaching Economic Benefits

This report's main focus is to examine the immediate economic impacts of the early childhood care and education industry in southeastern Wisconsin. A wide body of research exists, however, to conclude that early childhood care and education produces a much broader set of economic impacts to children and society as a whole, particularly when that care and education is deemed to be of very high quality.

Longitudinal research has found that high-quality early childhood education tends to produce better educational outcomes, such as being more likely to enter school ready to learn, and less likely to need special education, be held back a grade, or to drop out. The benefits continue into adulthood and include lower welfare costs, higher income (and the accompanying tax contributions), and lower criminal participation. The high-quality programs studied tended to have teachers with four-year college degrees, smaller-than-usual teacher-child ratios, a set educational curriculum, and interventions with the family units such as home visiting. For links to these and other research studies, see the Public Policy Forum's research matrix at http://www.publicpolicyforum.org/Matrix.htm.

The positive child outcomes have far-reaching economic implications. Studies have produced return-on-investment estimates ranging from a $2 return on every dollar invested to a $17 return on every dollar invested. Studies reporting the highest long-term economic benefit included savings resulting from reduced criminal activity.

Quantifying and assessing the potential economic impacts that could accrue to southeast Wisconsin as a result of investments in quality improvements is not the purpose of this report, but will be considered in detail in a follow-up report to be released later this year.

SECTION 3: INDUSTRY SCOPE AND CHARACTERISTICS

The first step in understanding the impacts of the child care industry in southeast Wisconsin is to identify its scope and characteristics. This section of the report examines the number of providers by type, the capacity of the industry, and the number of children served.

Southeast Wisconsin contains 3,552 regulated child care providers. Table 1 shows regulated providers by county and type of child care. This data does not include provisionally certified providers, who are considered unregulated until fully certified. In order to present the most current data possible, two data sources are used from 2006 and 2008.

Licensing and Certification

County certification applies to family child care providers. It allows providers to serve up to six children in their own home, depending on the ages of the children. A certified provider must complete a 20-hour class as well as five hours of annual training.

Family child care providers that are licensed by the state can serve up to eight children, depending on the ages of the children. A licensed family provider must complete a 40-hour class as well as 15 hours of annual training.

Dually-regulated family providers are both certified and licensed.

All group providers must be licensed by the state. These providers serve nine or more children, and often serve many children at one time.

Table 1. Regulated Southeast Wisconsin Child Care Providers by County and Provider Type

	Licensed group providers[1]	Licensed family providers[1]	Certified family providers[2]	Dually regulated family providers[2]	Regulated family providers[3]	All regulated providers
Kenosha	62	47	131	9	187	249
Milwaukee	502	1,011	804	23	1,838	2,340
Ozaukee	43	10	10	1	21	64
Racine	87	34	278	9	321	408
Walworth	44	22	17	2	41	85
Washington	66	11	19	1	31	97
Waukesha	174	74	58	3	135	309
7-cty total	978	1,209	1,317	48	2,574	3,552

[1]*Source: 2008 data from the WI Dept. of Children and Families.*

[2]*Source: WCCRP Early Care and Education Mapping Project.* http://ecemap.uwex.edu/index.aspx*, 2006*

[3]*Licensed family providers plus certified family providers plus dually regulated family providers.*

The 3,552 regulated child care services providers account for an estimated 74,627 child care slots, which represent the region's child care capacity. Table 2 illustrates the region's child care slots by county and provider type. While there are only 977 licensed group providers in the region, group programs account for the majority of child care slots because these providers serve more children.

Table 2. Regulated Southeastern Wisconsin Child Care Slots by County and Provider Type

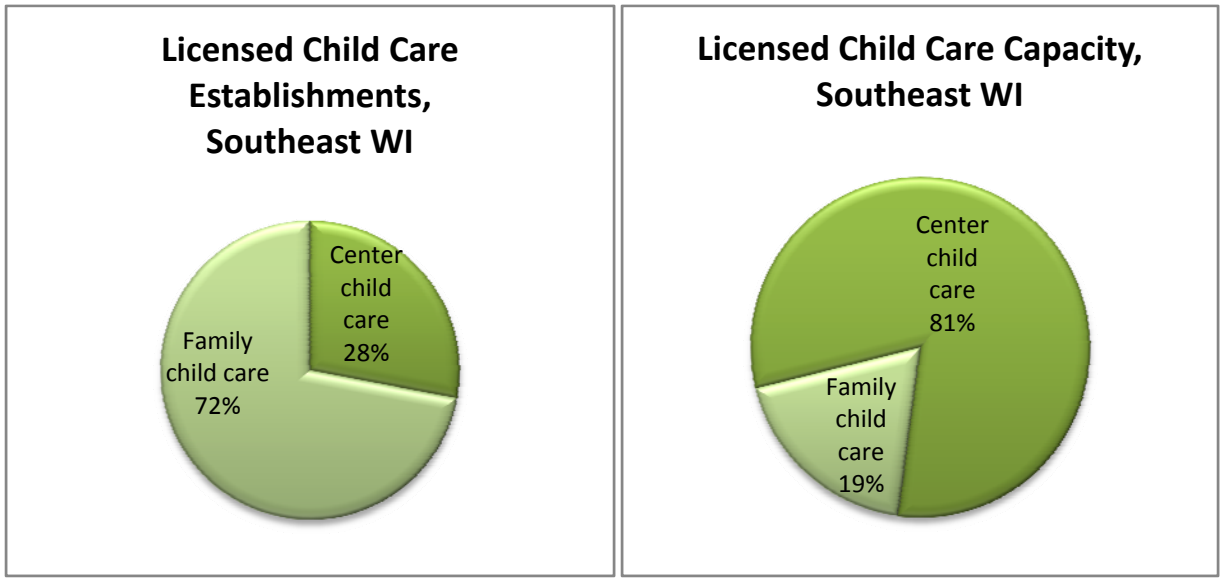
	Licensed group providers	Licensed family providers	Certified family providers	Dually regulated family providers	Regulated family providers[1]	All regulated providers
Kenosha	3,979	328	393	72	793	4,772
Milwaukee	31,880	8,272	2,412	184	10,868	42,748
Ozaukee	2,452	80	30	8	118	2,570
Racine	4,935	312	834	72	1,218	6,153
Walworth	1,790	168	51	16	235	2,025
Washington	3,570	128	57	8	193	3,763
Waukesha	11,790	608	174	24	806	12,596
7-cty total	60,396	9,896	3,951	384	14,231	74,627

Source: WCCRP Early Care and Education Mapping Project. http://ecemap.uwex.edu/index.aspx*, 2006.*

[1]*Licensed family providers plus certified family providers plus dually regulated family providers.*

Chart 1 illustrates that, while only 28% of area child care establishments are group centers, these centers account for 81% of the region's child care capacity, as measured by available child care slots. Regulated family care providers can only serve up to eight children at one time but group providers can serve many more children.

Chart 1. Southeastern Wisconsin Comparison of Establishments and Regulated Capacity



While the number of available slots is a useful indicator of the scope of the industry, it is also important to estimate the number of children actually served in the region. The Public Policy Forum conducted a survey of southeastern Wisconsin licensed and certified child care providers in early 2008.[5] The survey found an average enrollment rate of 89.45% among the region's providers who responded to the survey; thus capacity (the number of available slots) exceeds enrollment (the number of children filling the slots).

Applying the average enrollment rate to the estimated number of slots in the region results in an estimated 66,754 children served by regulated child care in the region.

DATA SYNOPSIS FOR SOUTHEAST WISCONSIN

Regulated child care providers:	3,552 family and group providers
Regional child care capacity:	74,627 child care slots
Estimated enrollment:	66,754 children
Licensed child care establishments:	28% center-based; 72% family child care
Licensed child care capacity:	81% center-based; 19% family child care

[5] Public Policy Forum. (2008, June.) Child Care Provider Survey Reveals Cost Constrains Quality. *Research Brief*, 96 (5). http://www.publicpolicyforum.org/pdfs/ProviderSurveyBrief.pdf

FACTORS INFLUENCING REGIONAL CHILD CARE SUPPLY AND DEMAND

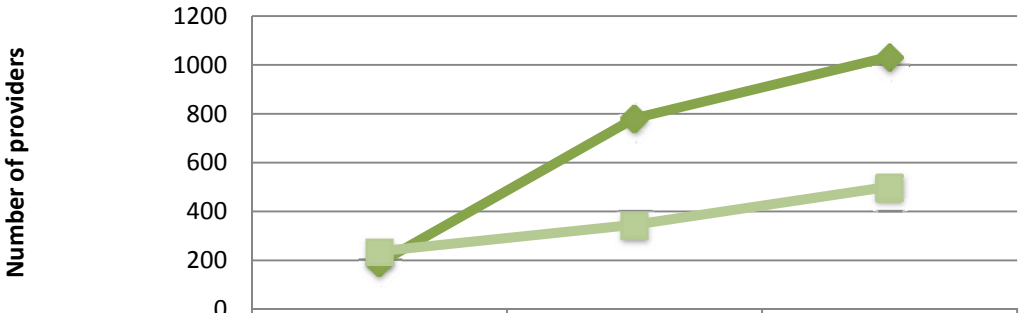
Welfare Reform and High Rates of Female Employment

In the 1990s, Wisconsin was a national model for welfare reform. In 1997, the state replaced its Temporary Aid to Families with Dependent Children with the Wisconsin Works, or W-2, program. W-2's requirement that recipients work was accompanied by a subsidy program for child care called Wisconsin Shares. In Milwaukee County, the number of families receiving the child care subsidy more than doubled between 1996 and 1999.[i] In 2008, the state budget expenditure for Wisconsin Shares was more than $200 million for Milwaukee County out of about $347 million statewide. Under W-2, Wisconsin reduced its welfare caseload by 93 percent[ii], and thousands of children found themselves in new child care arrangements.

Many new child care providers arose to meet the increased demand. In Milwaukee County, 141 new licensed family providers and 74 new group providers opened between 1996 and 1999, primarily in central city neighborhoods.[iii] Efforts such as the Wisconsin Child Care Mentor Project[iv] sought to encourage TANF recipients to become child care providers, serving the twin goals of reducing welfare caseloads and meeting the newly increased demand for child care.

The supply of Milwaukee County child care providers has continued to grow at a fast pace. A University of Wisconsin-Milwaukee analysis found that between 1996 and 2002, licensed family child care providers in the county increased by 312 percent and licensed group providers increased by 46 percent (Levine and Fendt, 2002). Chart 2[v] illustrates the growth in providers between 1996 and 2008.

Chart 2. Licensed Child Care Providers in Milwaukee County, 1991-2008



	1996	2002	2008
Licensed family	190	782	1034
Licensed group	237	346	502

Milwaukee County licensed family providers increased by 445 percent, and licensed group providers grew by 111 percent.

An additional factor influencing regional demand for child care is Wisconsin's high rate of female labor force participation. The U.S. Census Bureau's 2006 American Community Survey shows that 70 percent of southeastern Wisconsin children under six have all available parents in the labor force. (This rate includes working single parents and working coupled parents, and matches the rate for the state as a whole.) Nationwide, Wisconsin has the 5th-highest rate of children under age 6 with all parents in the labor force.

The number of licensed family providers in Milwaukee County increased 445 percent since 1996.

[i] Pawasarat, John and Quinn, Lois. (1999, October). *Impact of Welfare Reform on Child Care Subsidies in Milwaukee County: 1996-1999.* University of Wisconsin-Milwaukee Employment and Training Institute. www4.uwm.edu/eti/barriers/care99.htm

[ii] Wisconsin Historical Society, http://www.wisconsinhistory.org/turningpoints/tp-060/?action=more_essay

[iii] Pawasarat and Quinn, 1999.

[iv] See http://www.ccw.org/pubs/wiscsummary.pdf.

[v] Data source for the Levine and Fendt 1996 and 2002 data: Planning Council and 4C-Milwaukee. Data source for 2008 data: WI Dept. of Children and Families and WCCRP Early Care and Education Mapping Project.

SECTION 4: CHILD CARE LABOR FORCE

DIRECT EMPLOYMENT

Estimating direct employment in the child care industry is less straightforward than many other types of industry classification. The field includes sole proprietors, self-employed persons, caregivers who are employed by schools or other institutions, and providers falling under a host of different regulations from child care to preschool to day camp. Because of these complicating factors, official measures of employment tend to undercount the total workforce.

Two methods are used to estimate direct employment in the child care services industry. Each method's assumptions and steps are described in detail in the appendix, and in summarized version below. Given that each method has strengths and weaknesses, they are used to estimate either end of a range, and this range serves as a best-possible estimate of overall direct employment.

Estimating Direct Employment: Method 1

This method of estimating the employment of group child care centers is derived from the California LINCC project and matches the method used by local researchers Levine and Fendt in their 2002 Milwaukee County project.[6]

This method calculates enrollment estimates and makes those estimates age-specific. It uses data from state licensing figures, the Public Policy Forum child care provider survey conducted in 2008, and Wisconsin Shares child care subsidy usage information (see Appendix 1 for more information). Applying staff-to-child ratios of one staff for every 10 children results in an estimated 6,576.3 teaching staff in southeast Wisconsin licensed group centers and an additional 310 support staff (such as a director, custodian, cook, receptionist, and off-site administrator). For family child care providers, it is assumed that each of the 2,574 regional providers has one employee.

Method 1's estimates:

Licensed center teaching employees:	6,576.3
Licensed center support employees:	310
Family child care employees:	2,574
Total direct employment (Method 1 Estimate):	9,460.3

[6] The National Economic Development and Law Center (NEDLC) launched the Local Investment in Child Care (LINCC) Project in 1996. The LINCC methodology can be found in: Hildebrand, Alex and Upp, Stephanie. (2001). *A Methodology Guide: Creating an Economic Impact Report for the Child Care Industry.* NEDLC.

METHOD 1 STRENGTHS AND WEAKNESSES

Strength: This method uses very reliable and precise data as its starting point—the state's count of the number of licensed providers in each county, each provider's capacity, and hours of operation.

Weakness: This method does not take into account the age of the child being served, which could influence the estimate since Wisconsin's staff-child ratios dictate a ratio as small as one staff to four children for infants and as large as one staff to 13 children ages four and above.

Estimating Direct Employment: Method 2

Method 2 uses U.S. Census data to estimate population by age in each of the seven counties and uses findings from a Public Policy Forum parent survey[7] conducted in 2008 to identify the population of 0-to-5-year-olds in the seven counties who attend group child care (see Appendix 2 for more information). Applying the age-specific staff-to-child ratios required by Wisconsin licensing standards to the population data results in an estimated 12,476 teachers employed by group centers. As in Method 1, there are an estimated 310 support staff and 2,574 family child care providers.

Method 2's estimates:

Licensed center teaching employees:	12,476.4
Licensed center support employees:	310
Family child care employees:	2,574
Total direct employment (Method 2 Estimate):	15,360.4

METHOD 2 STRENGTHS AND WEAKNESSES

Strength: Unlike Method 1, this method ties the staffing numbers to the specific age of the child served.

Weakness: Since county-specific data on child care *enrollment by age* is not available, survey estimates of participation by age were applied to data on the general population.

[7] Public Policy Forum. (2008, April). Parents pleased with child care options and quality: Survey results suggest contrasting child care priorities. *Research Brief*, Vol. 96 (4). http://www.publicpolicyforum.org/pdfs/ParentSurveyBrief.pdf

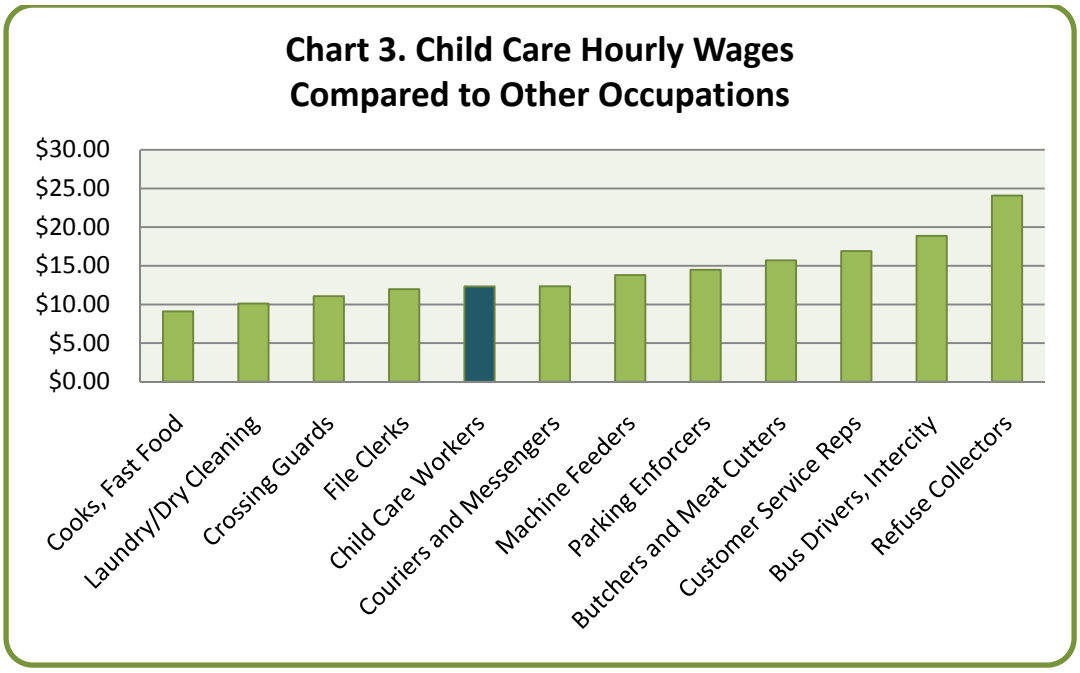
As with all attempts at modeling, each modeling method has strengths and weaknesses. Additionally, the total number of workers is likely to be higher than the estimated figures due to the fact that many child care employees may work part-time. Table 3 compares Methods 1 and 2. **The overall estimate used in this report is the average of these two estimates, 12,410.**

Table 3. Direct employment estimates for southeastern Wisconsin		
Type of Employee	**Method 1**	**Method 2**
Licensed center teachers	6,576.3	12,476.4
Licensed center support staff	310	310
Family child care teachers	2,574	2,574
Total direct employment	9,460.3	15,360.4
Average of methods 1 & 2:	***12,410* directly employed in child care industry**	

Wage Impact in the Child Care Industry

Other studies have found that wages in the child care industry are low, and turnover tends to be high. It is difficult to get reliable data on child care wages due to the diversity of business types and job titles within the industry. Some industry data does not count sole proprietors in child care. For this reason, the Bureau of Labor Statistics (BLS) estimate on wages for Child Care Workers (NAICS industry code 39-9011) for the Metropolitan Statistical Area (MSA) of Milwaukee-Waukesha-West Allis may be somewhat inaccurate, yet represents the best available data.

The BLS estimates that the 2007 average hourly wage for child care workers in the MSA is $12.33, with an average annual income of $25,640. Just outside of the MSA, in Racine County, the average hourly rate is lower, at $8.97. Chart 3 compares the Milwaukee MSA hourly wage to other professions.



For the purposes of this report, the BLS data is used to create a rough estimate of the annual payroll of the industry.[8] Anecdotal evidence suggests that the BLS child care worker wages may be over-estimated for many child care employees, yet under-estimate what many child care center directors earn. In creating a rough estimate of total industry payroll, we multiply the estimate of the industry's regional direct employment (12,400) by the average salary for the MSA. **This shows that the child care industry pays its employees roughly $318 million annually.**

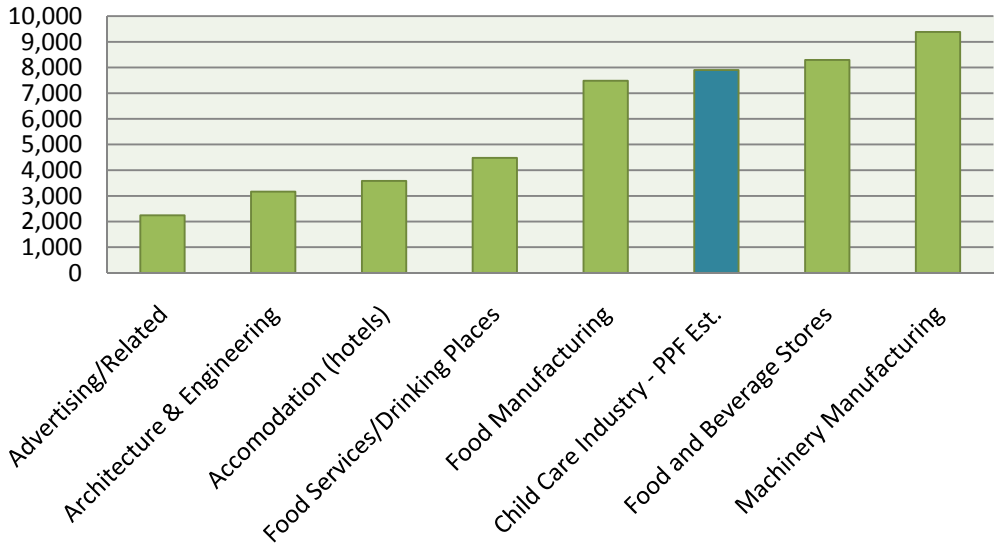
[8] The Public Policy Forum's forthcoming report on cost estimates in early childhood education, which will be able to be accessed at www.publicpolicyforum.org, will more fully explore wage estimates for each job title within the industry.

MILWAUKEE COUNTY SNAPSHOT

Comparing Employment to Other Industries

Milwaukee County accounts for an estimated 7,900 child care industry employees. Chart 4 uses 2002 Economic Census data to compare Milwaukee County child care industry employment to other industries, showing it to be larger than advertising, architecture and engineering, hotels, food services, and food manufacturing.

Chart 4. Milwaukee County Child Care Employment Compared to Other Milwaukee County Industries



SECTION 5: CHILD CARE INDUSTRY GROSS RECEIPTS

Introduction

In many industries, such as mining or engineering, data collection on industry characteristics is a normal and reliable practice. One can look up the mining or engineering industries in the U.S. Economic Census or the North American Industry Classification System webpage and find data on gross receipts, numbers of employees, wages, and more. For a variety of reasons, little reliable data is available for the child care industry. A National Economic Development and Law Center report[9] noted that the government's data collection methods "either fail to include large portions of the licensed child-care industry or scatter them throughout several unconnected industry categories." Some industry classifications fail to capture data on child care programs operated in connection with public schools or operated out of homes. Other methodologies exclude self-employed persons or small establishments (Hildebrand and Upp, 2001).

Because official measures of employment and receipts in the child care industry produce an under-counting or artificially low estimation, this report uses a new estimate of gross receipts based on available data and a series of assumptions detailed below.

This section first estimates gross receipts in the industry. It then compares the estimate to other local industries.

ESTIMATING GROSS RECEIPTS

Information on gross receipts is necessary to understand the economic impact of child care as an industry. The gross receipts estimate for the regional industry in this report uses data from the Public Policy Forum's child care provider survey and the Wisconsin Child Care Research Partnership Early Care and Education Mapping Project data on capacity. The Cornell methodology is used for creating child care cost estimates, as well as the NEDLC (National Economic Development and Law Center) methodology[10] as used by Levine and Fendt in their 2002 report for the University of Wisconsin-Milwaukee Center for Economic Development.

The Public Policy Forum's January 2008 survey of child care providers yielded data on how weekly rates differed according to type of provider and age of child (see Table 4).

[9] Hildebrand, Alex and Upp, Stephanie. (2001). *A Methodology Guide: Creating an Economic Impact Report for the Child Care Industry*. National Economic Development and Law Center.
[10] Initially developed by NEDLC for the California LINCC project.

Table 4. Average Weekly Rates at Regulated Child Care Providers in Southeastern Wisconsin			
Type of Provider	**Infant**	**Toddler**	**Preschool**
Licensed Family	$191	$177	$164
Certified Family	$134	$128	$116
Group center providers	$219	$198	$172
Preschools	N/A	$155	$72

Source: Public Policy Forum survey of child care providers, 2008. (N=414)

The rates found in the Forum's survey compare favorably with another local study's information on weekly rates. A 2002 report by John Pawasarat and Lois M. Quinn of the University of Milwaukee's Employment and Training Institute[11] examined data from the state's required child care rate survey related to child care subsidy rates. They found that the most common rate charged by licensed group providers was more than $200 per week for infants and more than $172.50 per week for older children.

Additionally, the report notes that in 2001, more than half of licensed family child care providers in Milwaukee County charged more than $180 per week for infants and toddlers, and the largest share of them charged more than $165 per week for older children.

The average of each type of child care's weekly charges was used to calculate gross receipts by multiplying the average rate with the estimated enrollment (Table 5).

Enrollment x average weekly rate x 52 = annual gross receipts

When all types of child care are combined, the child care industry in southeast Wisconsin has estimated annual gross receipts of $661 million. Table 6 shows the gross receipts estimates broken down by county.

[11] Pawaserat, John and Lois Quinn. (2002, May). *Addressing Barriers to Employment: Increasing Child Care Rates and the Rate Setting Process Under the Wisconsin Shares Program.* Employment and Training Institute, School of Continuing Education, University of Wisconsin-Milwaukee. http://www4.uwm.edu/eti/barriers/rates.htm

Table 5. Calculating gross receipts according to child care type				
	Licensed Family Child Care*	**Certified Family Child Care**	**Group Center Child Care**	**Total**
Capacity (in slots)	10,280	3,951	60,396	74,627
Enrollment (89.45% of capacity)	9,195	3,534	54,024	66,754
Average rate per week	$177	$139	$196	N/A
Total gross receipts per week	$1,627,596	$491,250	$10,588,748	$12,707,593
Total gross receipts per year	$84,635,014	$25,544,977	$550,614,871	$660,794,862

* Includes dually-regulated family care providers.

Table 6. Gross Receipts Estimates by County for Regulated Providers	
Kenosha	$42,109,636
Milwaukee	$375,854,516
Ozaukee	$23,272,722
Racine	$53,544,777
Walworth	$18,163,577
Washington	$34,034,992
Waukesha	$113,814,641
7-county total	**$660,794,862**

Examining Assumptions

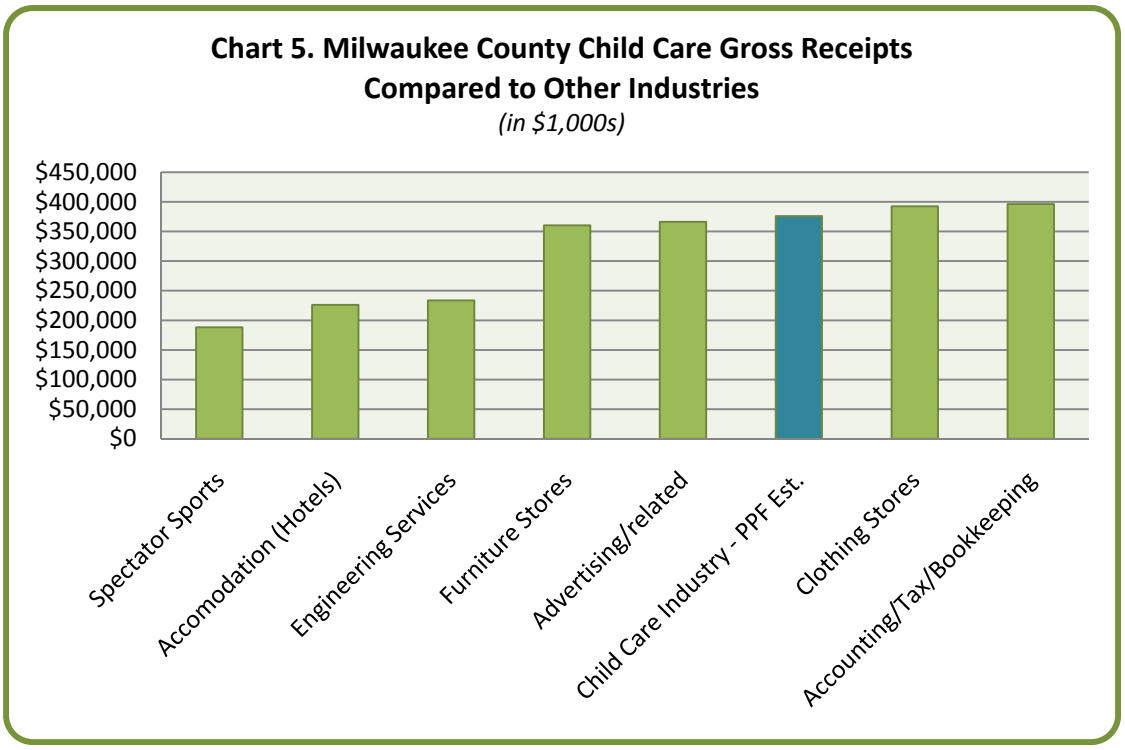
It is instructive to provide some context for this $661 million gross receipts estimate for child care in the region. The following assumptions were made based on what is known about the data methods, and the reliability of the data. However, some factors could create different outcomes:

- The data assumes full-day child care. While a portion of children only attend child care for part of the day, the existing data on these rates were not reliable enough to use.
- The gross receipts calculation assumes year-round child care use for 52 weeks. Some families may use child care only during certain times of the year.
- Weekly rates were averaged across age groups. While this is a reasonable accommodation, further research may wish to refine the rates by age of children served.
- The assumption that only 89.45% of available slots are filled at any one time is based on Public Policy Forum survey data. Other surveys may show different results, or demand for child care may increase in such a way that the enrollment goes up.
- The calculations are initially based on data on the number of child care slots, which are not age-specific. Though this report uses the term “early childhood education,” some of the

slots in this calculation are filled by older children. Including these older children better captures the full economic impact of child care as an industry.

Child Care Gross Receipts Compared to Other Local Industries

Chart 5[12] shows how the gross receipts of Milwaukee County's child care industry compare to other Milwaukee County industries. The child care industry has larger gross receipts than spectator sports, hotels, engineering, furniture stores, and advertising.



Section seven of this report explores industry comparisons in more detail, including how spending in the child care industry affects other industries.

[12] Data from 2002 Economic Census put into 2008 dollars for comparison to the Public Policy Forum estimate for child care industry gross receipts.

SECTION 6: PARENTS SERVED AND THE IMPACT OF PARENTAL EARNING

Introduction

Thus far, this report has analyzed the economic impact of the child care services industry using traditional methods such as estimating the gross receipts and direct employment. Such analysis shows the southeastern Wisconsin child care services industry generates more than $660 million in annual gross receipts and employs an estimated 12,400 people. The child care industry also benefits the economy by allowing many parents to participate in the region's workforce. Thus, it is important to estimate these parents' contribution to the regional economy.

ESTIMATING PARENTS SERVED

Parents are the "customer market" in the child care industry. Multiplying the number of working parents by the region's median wage can provide an estimate of the purchasing power of the parent customer market. Surprisingly, there is no data source that measures the number of parents with children in paid child care. Therefore, a few different data sources are combined to create a reasonable estimate.

To create this estimate, it is assumed that the market of parents needing child care consists of working single parents as well as dual-parent families in which both parents work. Dual-parent families in which only one parent works are assumed not to use regular paid child care. (Though some do for a variety of reasons.)

It is fairly common for families to take part in informal, unpaid child care from a relative or friend. Because this report examines paid/formal child care, survey data provides an estimate of the portion of working parents using paid care.

Census data does not track children by family and parent employment status, so a number of steps are used to estimate the total number of working parents with children under six years of age from families in which all available parents are in the labor force. The steps, which follow the Cornell Methodology Guide (Ribeiro and Warner, 2004), are described in detail in Appendix 3 and summarized below.

U.S. Census data detail the number of parents of children under age 6 in families with both parents in the labor force, as well as the number of single parents with children under 6 who are in the

15,914 parents

*

of children under 6 in southeast Wisconsin

*

from families in which all available parents are in the labor force

*

use paid child care.

labor force, which together total 29,680 parents. Because the Public Policy Forum's 2007 survey of parents indicated that 57% of coupled parents and 46% of single parents of children under 6 from households in which all available parents were working used some type of paid child care, the total number of parents was adjusted according to these rates. The resulting estimate is **15,914 parents of children under 6 in southeast Wisconsin from families in which all available parents are in the labor force using paid child care.**

Researchers differ in how they characterize these parents. Levine and Fendt (2002) described the child care industry as "freeing up" these parents to earn wages that are important to the economy, terming it child care's "productivity effect."[13] Others claim that child care "enables" their earning power or productivity. Those analyzing the child care market view these parents' wages as a proxy for "parent purchasing power." What is most clear is that without a paid child care option, these parents would have to respond in some way, such as dropping out of the labor force or devising an informal child care arrangement (perhaps with a friend, relative or neighbor).

3.5% of the region's labor force is "freed up" to work through paid child care arrangements for children under age 6.

Our estimate of 15,914 parents "freed up" to work by formal child care arrangements represents 3.5 percent of the region's total labor force participation (WI Dept. of Workforce Development, 2007).[14]

Estimating the Impact of Parental Wages

Background

Economic analysis typically inquires about the elements of economic infrastructure that enable employees to participate in the labor force. Those elements typically include roads, water supply, and reliable electric power. Less directly, training and education also enable employees' workforce participation. Similarly, child care enables many parents to pursue employment and earning. An increasing number of researchers and economists are viewing child care as an element of a region's economic infrastructure (Ribeiro and Warner, 2004).

[13] Levine and Fendt's methodology for this estimate differed from this report.

[14] County Workforce Profiles of Wisconsin, 2008 reports showing 2007 data. Labor force participation includes unemployed jobseekers. http://dwd.wisconsin.gov/oea/county_profiles/current.htm

Estimating Parental Earning Enabled by Child Care

Quantifying parent income resulting from the availability of paid child care can take a number of forms depending on the frame of inquiry. Most studies multiply the number of working parents using paid child care by the region's median income to find the income earned as a result of available child care.

Some studies count only single parents and one-half of dual-earner households. This method assumes that in families in which both parents work, only one of those parents' earnings (often just the mother's earnings) is enabled or "freed up to work" by child care. That is because, ostensibly, that other parent could choose to stay home and care for the children (i.e., the second parent's labor force participation is a choice and, therefore, is not enabled by child care). This method will be described below as the One-Earner Estimation Method.

What does the One-Earner Estimation Method include in its calculation?

- 6,268 single parents*
- 29,935 dual-earner couples *
- Does *not* count married couples in which one parent stays home, assuming they do not use child care.
- Median income of $34,941. (Since median income and population vary across counties, it was necessary to apply population "weights" to each county's data, to create a weighted-average annual median income for female full-time workers in the region.)

***Of children younger than 6, using paid child care (not informal arrangements), and in the labor force.

Ribeiro and Warner, writers of the Cornell Methodology, dispute this method of estimation, claiming it under-counts true market demand and fails to recognize that child care supports workers regardless of gender and family structure. Additionally, the writers point out that such an approach assumes there is no educational, investment, or consumption value to child care (i.e., that child care's only value is to support working parents). In order to produce a balanced analysis, we are including both this method and an alternate, more inclusive estimate in the next section.[15]

[15] We are not aware of estimation methods refined enough to consider the impact of same-sex family structures , unmarried but cohabitating dual-earner couples, guardianship situations, or the monetary value of the unpaid household and child-rearing work done by stay-at-home parents.

One-Earner Estimation Method

(Coupled parents of children under age 6 using child care/2
+ single working parents)
x regional median income =
annual earnings enabled by child care usage

[(29,935/2) + 6,268] x $34,941 =
$742 million annual estimated earning enabled by paid child care in southeast WI for families with children under age 6.

Assumptions relevant to this figure:

- Assumes that if there were no child care, the female part of a married couple would be more likely to drop out of the labor force. Also, applies the female median wage to all single parents even though some single parents are male. These assumptions are more accurate than the alternative of applying the overall median income for the region, because it is more common, though certainly not universal, for females to leave the labor force to care for children.

- Assumes that having both members of a married couple in the labor force is a choice, not a necessity, so only one member's income is *enabled* by child care. While that assumption can be disputed, it is also relevant to consider that if child care were suddenly unavailable, it is highly probable that only one member of a couple would drop out of the labor force to care for the child(ren), not both at once.

- Since this figure only considers families with children under age 6 in which all available parents are working, it is a conservative estimate and likely fails to capture families who rely on child care for older children, as well as those who choose to pay for child care not to enable their employment but for educational or other purposes.

The One-Earner Estimation Method seeks to answer the question, "How much does child care *enable* parents to earn that they would not otherwise be able to earn?" Accepting that child care enables parents to earn assumes that the absence of child care options would result in lost productivity and, therefore, lost income.

Estimating Parent Purchasing Power

While the One-Earner Estimation Method views paid child care as enabling *half* of dual-earner couples' salaries, estimating parent purchasing power enabled by child care usage calls for including *both* salaries of dual-earner couples. This is the Aggregate Household Income Estimation Method.

The purchasing power calculation uses the aggregate household income due to the assumption that parents wish to and, in many cases, need to maintain the total household income and standard of living. The household's purchase of child care is often key to allowing households to pursue activities that have high economic value.[16]

Aggregate Household Income Method

The Aggregated Household Income Method multiplies the number of working parents with children under age 6 in paid care by the median income. In the "Estimating Parents Served" section of the report, we identified that an estimated 36,203 working parents of children under age 6 in southeastern Wisconsin from households in which all available parents are in the labor force use paid child care (includes 6,268 single parents, and 14,968 working married couples).

Since median income and population vary across counties, it was necessary to apply population "weights" to each county's median income. Using income data from the 2006 American Community Survey, we found that the weighted average median income in southeastern Wisconsin for families with children was $60,560. The weighted average median income for female full-time workers was $34,941, which is the rate we use for estimates involving single parents.

(# of single working parents x regional median income for female full-time workers)
+ (# of working couples x regional median household income)
= annual purchasing power enabled by child care usage

(6,268 x $34,941) + (14,968 x $60,560) = **$1.1 billion, the annual purchasing power of the child care industry's customer market for families with children under age 6 in southeastern Wisconsin using the Aggregated Household Income Method of estimation.**

[16] M.Cubed. (2002). *The National Economic Impacts of the Child Care Sector.* The National Child Care Association. http://government.cce.cornell.edu/doc/pdf/UnitedStates.pdf

Assumptions relevant to this figure:

- While income estimations cast some light on the potential purchasing power of these parents, the most useful estimation of purchasing power would be based upon disposable income (which is very difficult to quantify).

- Similar to the estimation of earnings enabled by child care usage, this figure only considers families with children under age 6 in which all available parents are working; thus, it may fail to capture families who choose to pay for child care for educational or other purposes.

- Applying the female median wage to single parents is more accurate than applying the overall median wage but fails to acknowledge male single parents in the labor force who purchase child care.

SECTION 7: REGIONAL ECONOMIC LINKAGES OF THE CHILD CARE SECTOR

Introduction

Child care's economic impact as an industry does not occur in a vacuum. The economy is more like an interconnected web than a series of silos – what happens in one industry spills over to affect other industries with which is it linked. For instance, industries buy and sell from each other. Child care businesses and child care employees both make purchases of goods and services that stimulate economic activity in other industries.

Some of the linkages between industries are local, whereas others involve one industry stimulating another that is outside of the initial industry's economy. When industries outside of the economy in question are stimulated, such as an economy in another state, that constitutes "leakage" from the region's economy.

Industries that connect to other industries in a way that stimulates the local economy and prevents leakages outside of the economy are said to have strong linkage effects. There are two types of linkage effects associated with the child care industry:

- **Indirect effects** quantify the multiple rounds of inter-industry purchases spurred by child care industry spending. For example, when a child care provider makes purchases from a local supplier for food and supplies, they stimulate demand in the food production and manufacturing sectors. The extent to which this demand generates economic activity within the state or region in question increases the linkage effect.[17]

- **Induced effects** quantify the broad impact of the household sector. Child care employees spend their wages to purchase their own food, clothing, etc. The dollars that are spent locally generate demand in those sectors. Mildred Warner of Cornell University claims that most of child care workers' earnings are spent locally on groceries, clothing and housing.[18]

This section of the report will analyze how the child care industry is linked to other industries, and also the extent to which those linkages either stimulate the local economy or, conversely, represent a leakage to other economies. Analyzing the child care industry's direct employment and gross receipts along with inter-industry linkage effects provides a fuller understanding of the total impact of the industry.

[17] Warner, Mildred, et al. (2004). *Investing in New York: An Economic Analysis of the Early Care and Education Sector.* New York State Child Care Coordinating Council.
[18] Ibid.

Explanation of Input-Output Analysis and the Use of Multipliers

A type of regional economic modeling known as input-output analysis is useful for quantifying the value of the linkages and economic "ripple" effects that stem from the child care industry. The IMPLAN modeling system was originally developed to conduct input-output analysis for land and resource management planning, but is now the most commonly used program for the regional economic analysis of the child care sector (Liu et al, 2004).[19] IMPLAN integrates a host of data sources to analyze how an industry is affected by a change, such as additional spending or additional hiring. While input-output analysis is useful for describing industries, its emphasis on how an industry is affected by *changes* in spending and hiring also make it useful for predicting impacts of economic development policies, regulations, or other changes to an economy.

What is a multiplier?

Multipliers are industry-specific numbers developed by research institutions that express the extent to which one industry stimulates economic activity in other industries that it is linked to.

The higher the multiplier effect, the greater the overall economic impact of an industry.

Two figures derived earlier in this report – direct employment and gross receipts – are multiplied by Type II "multiplier" numbers to reveal an estimate of the full impact of the industry.

Gross Receipts
x Type II Output Multiplier
Total Output Impact

Direct Employment
x Type II Employment Multiplier
Total Employment Impact

IMPLAN has compiled "multipliers" for hundreds of industry sectors.[20] The multiplier numbers[21] are used to estimate the regional economic impact that would result from a one-unit change in demand of a particular industry. The following example illustrates how multipliers are used to express output impacts and employment impacts. In this example, assume that the employment multiplier is 1.8 and the output multiplier is 1.5.

- **Employment Impact:** *Each additional job created by an increase in demand for industry X generates a total of 1.8 jobs throughout the region.*

- **Output Impact:** *Each additional dollar of spending for industry X generates a total of $1.50 in economic activity throughout the region.*

[19] For more information on IMPLAN, see www.implan.org and http://en.wikipedia.org/wiki/IMPLAN.

[20] "IMPLAN is based on a table of direct requirement coefficients which indicate the inputs of goods and services from various industries required to produce a dollar's worth of output in another, single industry. … For example, producing a ton of steel may require three workers and a particular set of equipment, which would not be required if the steel were no longer needed" (p. 49). Source: Traill, Saskia and Wohl, Jen. (2003). *The Economic Impact of the Child Care Industry in Minnesota.* National Economic Development and Law Center.

[21] Multipliers are also sometimes referred to as representing "backward linkages" in the economy.

As is apparent from the above example, an industry's full impact stretches beyond its own boundaries to affect other industries and the regional economy as a whole. Industries like child care, which are known to make a lot of local purchases, have larger effects than other industries that purchase supplies from non-local economies. Child care has a strong linkage effect in the local economy, and its multipliers are higher than multipliers in many other sectors. While child care's inputs like food, toys and labor are readily available in the state and regional economy, many other types of industries must purchase parts and supplies from other economies.

The size of an economy also can affect the size of the multiplier. Large economies are often more self-sufficient than smaller economies and therefore have large multipliers. However, small economies that are very isolated also tend to have large multipliers because there is little "leakage" into outside areas.

While there are various kinds[22] of multipliers that can be used in input-output analysis, in following the Cornell Methodology, Levine and Fendt's 2002 report, and many other examples[23] of child care industry analysis, this report uses Type II multipliers. Unlike Type I multipliers, Type II multipliers include induced effects. Type II multipliers consist of direct, indirect and induced effects. Direct effects are introduced into the local economy as a result of spending on child care, and are referred to by economists as a measure of changes in final demand. Type II multipliers are most often used to estimate changes in external demand, which in the case of child care could be triggered by changes in government funding.

Impact of the Child Care Industry

Our calculations use IMPLAN multipliers from 2000 that are specific to the state of Wisconsin.[24] The Type II employment multiplier for child care is 1.58.

That means that each additional job created by an increase in demand for child care generates a total of 1.58 jobs throughout Wisconsin.

The southeast Wisconsin child care industry supports

7,192 jobs

in other, non-child care industries in Wisconsin.

[22] There is some debate among economists over the appropriateness of using Type I or Type II multipliers to analyze the child care industry. It is beyond the scope of this report to evaluate all sides of this debate. Ribeiro and Warner, writers of the Cornell Methodology that is guiding this work, have reviewed this issue in depth and determined that these methods are valid. Some of the criticism rested on the fact that Type II multipliers were designed to measure changes in external demand, while demand for child care is primarily local because it is from households. Ribeiro and Warner assert, however, that the substantial role of federal funding in child care does act as external demand. Additionally, they claim that household consumption (as reflected in "induced effects") is important in its own right because local consumer demand plays an important role in economic development.

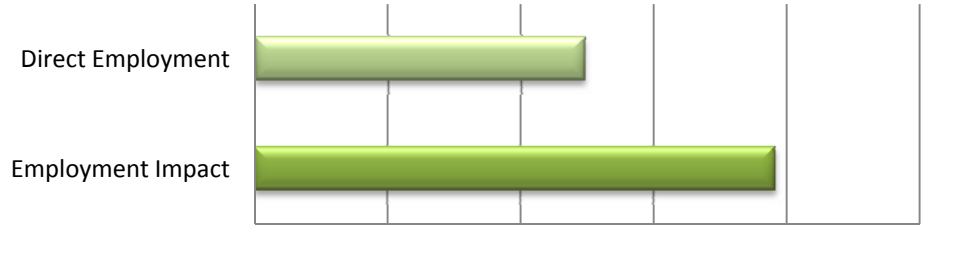
[23] See http://government.cce.cornell.edu/doc/reports/childcare/matrix.asp for other studies.

[24] IMPLAN 2000 multipliers accessed via: Liu, Zhilin, Ribeiro, Rosaria and Warner, Mildred. (2004). *Comparing Child Care Multipliers in the Regional Economy: Analysis from 50 States.* Linking Economic Development and Child Care Research Project, Cornell University.

Earlier in the report, we estimated that the seven counties of southeastern Wisconsin employ about 12,400 people in the child care industry. That figure is multiplied by the 1.58 Type II multiplier to reveal an employment impact of 19,592 people for the regional child care industry, as illustrated in Chart 6.

12,400 x 1.58 = ***19,592 total employment impact***

Chart 6. Employment Impact of the SE Wisconsin Child Care Industry



	Employment Impact	Direct Employment
Child Care Employees	19,592	12,400

The Type II output multiplier for child care is 1.98. That means that each additional dollar of spending for the child care industry generates a total of $1.98 in economic activity throughout the state.

Earlier in the report, we estimated that the seven counties of southeast Wisconsin have annual gross receipts of about $661 million in the child care industry. That figure is multiplied by the 1.98 Type II multiplier to reveal an economic impact of $1.3 billion for the regional child care industry, as illustrated in Chart 7. That implies that the child care industry's purchases generate another $648 million in sales in other industries.

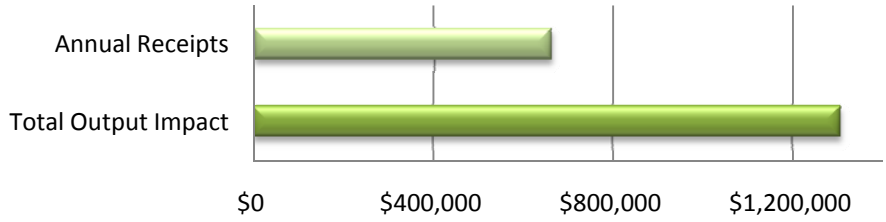
$661 million x 1.98 = ***$1.3 billion total output impact***

The southeast Wisconsin child care industry's purchases generate another

$648 mil. in sales in other industries

throughout the state.

Chart 7. Receipts and Economic Impact of the SE Wisconsin Child Care Industry



	Total Output Impact	Annual Receipts
Child Care Receipts (in $1000s)	$1,308,378	$660,797

COMPARING CHILD CARE'S IMPACT TO OTHER INDUSTRIES

The IMPLAN multipliers allow for industry comparisons. Data on employment and gross receipts for other industries are from the U.S. Census Bureau's 2002 Economic Census.[25] The analysis is constrained in this area due to lack of access to multipliers for all industries, as well as lack of Economic Census data on the industries for each of the seven counties. Further research may be warranted to compare the regional child care industry to other education-related fields or to include more industries. Such research also could increase specificity by using county-specific multipliers instead of the state-wide multipliers used here. See Appendix 4 for more information on data sources and specific figures.

Liu et al (2004) compared nation-wide averages for the child care industry's multipliers to other industries, and found that child care Type II output multipliers are in the 93rd percentile of all sectors, indicating both more local purchases by the child care industry and more local consumption by child care employees. Employment multipliers for child care tend to be lower than the output multipliers because child care is a labor intensive industry that tends to purchase from industries that are less labor intensive (Liu et al, 2004). Even in employment, however, child care multipliers compare favorably to other sectors that make up what is sometimes referred to as "social infrastructure" (schools, colleges, hospitals and transportation). Child care's employment multipliers also compare favorably to the other labor intensive economic sectors – retail, hotels, and eating and drinking establishments.

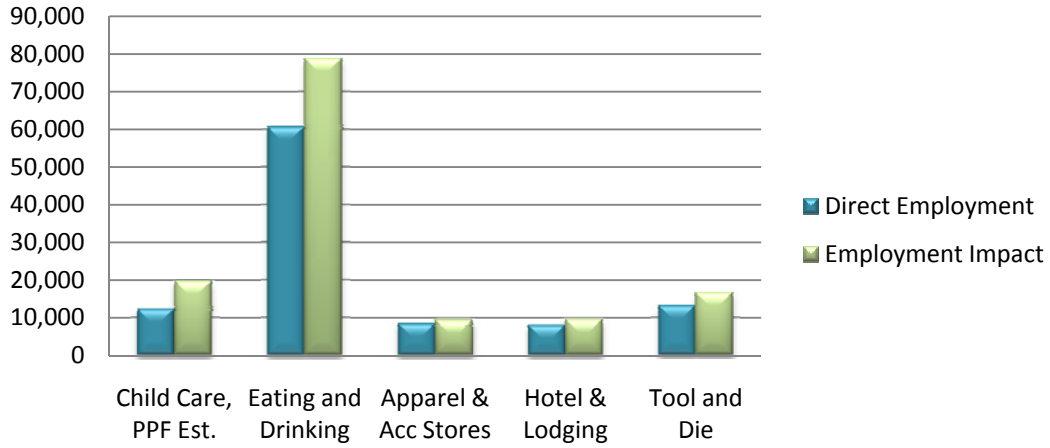
As Table 7 shows, the employment multipliers vary according to industry. Industries with higher employment multipliers play a greater role in generating employment in other local industries, and also signify less "leakage" to other economies and more self-sufficiency as a regional industry.

[25] http://www.census.gov/econ/census02/guide/02EC_WI.HTM

Table 7. Type II Wisconsin Employment Multipliers for Selected Industries	
Child Care	1.58
Eating and Drinking	1.30
Tool & Die	1.25
Hotel & Lodging	1.19
Apparel & Accessory Stores	1.09

As Chart 8 shows, even though child care's direct employment is similar to the region's tool and die industry, since child care has a higher Type II multiplier, it has a larger overall employment impact as an industry. This chart also shows that the regional child care industry employs more people than apparel and accessory stores and the hotel industry.

Chart 8. Employment Impact of Child Care Compared to Other SE WI Industries



The second type of relevant comparison involves gross receipts. Table 8 shows the variation in Type II output multipliers across industries. Child care has the highest output multiplier among the selected industries for which we were able to gather complete data.

Table 8. Type II Wisconsin Output Multipliers for Selected Industries	
Child Care	1.98
Eating and Drinking	1.41
Hotel & Lodging	1.33
Tool & Die	1.24
Apparel & Accessory Stores	1.22

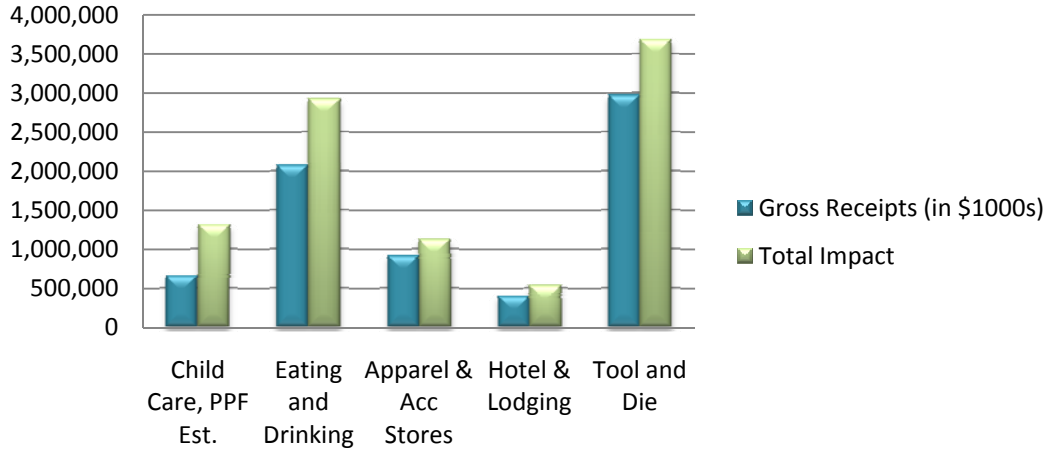
Industries with relatively high output multipliers had earnings that were able to generate more "ripple effect" earnings in other regional industries compared to industries with low output multipliers. High multipliers also signify greater self-sufficiency as an industry, implying less leakage out of the region to other economies or states.

Many of the child care industry's purchases are local, with inputs that are likely to be produced locally. This is in contrast to an industry like retail, for instance, which purchases many inputs from outside the local economy or the state, creating a "leakage" (Ribeiro and Warner, 2004).

Chart 9 shows the gross receipts cross-industry comparison. While the gross receipts of the region's apparel and accessory stores industry are larger than those of the child care industry, the Type II multiplier effect shows the child care industry's total impact to be larger than apparel and accessory stores.

A comparison of charts 8 and 9 underscores the labor-intensive nature of child care. While child care employs a similar number of people to the local tool and die industry, tool and die's gross receipts far exceed child care's earnings.

Chart 9. Receipts and Total Impact of the Child Care Industry Compared to Other Industries in SE WI



Sound economic development policy dictates that it is preferable not to invest too much in an industry that will pass the funds on to a different economy in another region (referred to above as leakage). In addition to looking at regional economic linkages, economic development specialists also examine the extent to which an industry attracts money to the economy from outside of the region or state (external demand) (Ribeiro and Warner, 2004). This report does not examine external demand in particular, but it is noteworthy that the Wisconsin Shares subsidy program, consisting of federal pass-through dollars, invests more than $300 million annually in Wisconsin's child care industry.

Input-output analysis shows that the child care industry's multipliers, which are sizeable compared to other industries, produce a broad economic impact. Dollars flowing into the industry are likely to be spent locally, with little leakage to other economies. The local inter-industry linkages supported by the child care industry benefit the regional economy.

SECTION 8: CONCLUSION

Findings

This report has demonstrated the direct economic impacts of southeast Wisconsin's child care industry. The economic footprint of the thousands of small and moderate-sized southeast Wisconsin child care businesses includes:

- More than 3,500 regulated child care providers employing an estimated 12,400 people.
- An estimated $661 million in annual gross receipts.
- Support of 7,000 jobs and $648 million in sales in other industries.
- An estimated 16,000 parents who are "freed to work" by paid child care arrangements and earn wages of more than $740 million annually.

We find that the region's child care industry is larger than the local hotel and lodging industry and employs more people than apparel and accessory stores and hotels. When the full economic impact is analyzed using multipliers, child care also has a higher employment impact than the tool and die industry and a higher output impact than apparel and accessory stores and hotels.

Policy Implications

In some ways, the child care industry functions as an element of economic infrastructure, meaning it joins the other elements of the economy that are viewed as enabling people to get to work and participate in the workforce and the economy – elements such as roads, bridges, and electricity.

Traditional economic development tools often are used to stimulate business developments or support economic infrastructure. Some claim there is a role for these tools in supporting the child care industry, in order to generate both social and economic payoffs. Traditional economic development tools include bonds, special tax zones, loans, loan guarantees, income tax credits and special exemptions.[26]

A 2003 report on the economic benefits of child care in Minnesota points out a number of economic development options for child care, including using economic development resources to incorporate high-quality child care into future development, funding participation of low-income children in high-quality child care programs, improving the business management skills of child care professionals, and supporting a stable and skilled child care workforce.[27]

This report explores the immediate impacts of the child care industry in the regional economy, and finds that they are substantial. These direct economic impacts join the group of other direct and indirect

[26] Kanell, Michael. Early investments: Some argue that taxes are better spent on preschools than on luring employers. *Atlanta Journal-Constitution*. (2006, February 26). Retrieved from LexisNexis.
[27] Traill, Saskia and Wohl, Jen. (2003). *The Economic Impact of the Child Care Industry in Minnesota.* National Economic Development and Law Center.

benefits – some of which apply to child care in any form, and some of which apply specifically to *high-quality* early childhood education.

Future Research

While this report focuses on economic benefits, the Public Policy Forum's next major report on early childhood education will explore the economic costs. In particular, prior research shows that the highest economic payoffs accrue from very high-quality care, which also happens to be costly to provide. The report will follow a methodology from the Institute for Women's Policy Research[28] in creating cost estimates related to levels of staff education, wages, and benefits dictated by what is commonly defined as high-quality care, as well as technical assistance and monitoring related to policy implementation. In exploring both the costs and benefits associated with various levels of care quality – through both social and economic frames of analysis – the Forum hopes to add context and a concrete framework for policy deliberation around quality improvements in early childhood care and education.

[28] Golin, Stacy Carolyn, Mitchell, A. and Gault, B. (2004). *The Price of School Readiness.* Institute for Women's Policy Research. http://www.iwpr.org/pdf/G713.pdf

SECTION 9: APPENDIX

APPENDIX 1: ESTIMATING DIRECT EMPLOYMENT: METHOD 1

This method, also used by Marc Levine and Pamela Fendt's 2002 project, was derived from the California LINCC[29] project. The following assumptions, data sources and calculations were used to estimate direct employment for child care centers in the seven-county region using Method 1:

1. **Calculating the FTE rate per employee:** Estimating began with county-specific lists of both family-based and group or "center-based" child care providers. This licensed provider data was available from information posted by the state Department of Children and Families and included specifics on the capacity; hours, days, and months of operation; and whether the provider was of a "family" or "group" type. The hours, days and months of operation were used to calculate the full-time equivalent (FTE) employment rate per employee at each group child care provider. It was assumed that full-time implies 8 hours of work per day, 5 days per week, and 12 months (or 52 weeks) per year, for a total of 2,080 hours. Given these assumptions, the following formula was used to calculate the FTE per employee at each group provider:

   $$\text{FTE for staff} = \frac{\text{(hours/day)}}{8} \times \frac{\text{(days/week)}}{5} \times \frac{\text{(months/year)}}{12}$$

   For instance, a center open year-round for 12 hours a day, Monday through Friday, would have an FTE for staff of 1.5, or one and a half shifts. This calculation was done for each group center.

2. **Calculating enrollment estimates:** The state data contains county-specific and provider-specific capacity data. However, the actual number served in child care programs is often below-capacity. To estimate actual enrollment, this report relies on the Public Policy Forum's 2008 provider survey data from 414 child care providers.[30] The survey found an average enrollment rate of 89.45% among southeastern Wisconsin child care providers. The average enrollment rate was applied to the capacity figures of each group child care center to create a new enrollment estimate, rounded to the nearest child.

3. **Making the enrollment estimates age-specific:** This report wishes to analyze the child care services industry with an emphasis on children ages 0-5 (though it is not possible in every instance to get data specific to that age group). Since the data set used in steps 1 and 2 is based on licensed family and group child care centers that serve children of all ages, there is a need to "shrink" or "discount" the enrollment figures according to the best estimate of the participation rates of children ages 0-5.

[29] The National Economic Development and Law Center (NEDLC) launched the Local Investment in Child Care (LINCC) Project in 1996. The LINCC methodology can be found in: Hildebrand, Alex and Upp, Stephanie. (2001). *A Methodology Guide: Creating an Economic Impact Report for the Child Care Industry.* NEDLC.

[30] Public Policy Forum. (2008, June.) Child Care Provider Survey Reveals Cost Constrains Quality. *Research Brief.* 96 (5). http://www.publicpolicyforum.org/pdfs/ProviderSurveyBrief.pdf

County-specific data on the share of children ages 5 and up using child care was not available. In making assumptions in this area, the report relies on data from the second quarter of 2008 from the Wisconsin Department of Children and Families on Wisconsin Shares usage by age. Wisconsin Shares is the state's child care subsidy program. Of the Wisconsin children using the subsidy, 64.9% were ages 2-5, and 35.1% were ages 6-13. In discounting enrollment figures, our data was multiplied by 0.649. Thus, the rest of the analysis is based on an estimate of the pool of regional children using child care who are ages 0 to 5.

4. **Adding staff-to-child ratios to create employment estimates:** Centers with high enrollment obviously require more employees. Method 1 of estimating direct employment does not permit the tailoring of staff estimates to the age of the child. Absent age data, a staff-to-child ratio about in the middle of the official staff ratios required for children of various ages, 1:10, is selected for use. Each center's enrollment was divided by 10 due to the estimate of one staff member for every 10 children. The resulting figures represent the estimated number of teaching staff in licensed group centers, with a regional total of 6,576.3.

5. **Estimating support staff:** In addition to estimating those who work directly with the children, support staff were also estimated using the LINCC methodology. Enrollment numbers had already been estimated as part of step 3. For each group provider with an enrollment greater than 80, five support staff were added, assuming a director, a custodian, a cook, a receptionist, and an off-site administrator. This added a total of 310 support staff across the seven counties.

6. **Counting family child care providers:** LINCC methodology estimates that each family or "home-based" child care facility has one employee. There are 2,574 family child care providers in the seven-county area.

7. **Compile the data for the region:**

Licensed center teaching employees:	6,576.3
Licensed center support employees:	310
Family child care employees:	2,574
Total direct employment (Method 1 Estimate):	9,460.3

APPENDIX 2: ESTIMATING DIRECT EMPLOYMENT: METHOD 2

The following assumptions, data sources and calculations went into Method 2's estimate of direct employment for child care centers in the seven-county region. Steps 1 through 4 only address group child care, and family care and support staff figures are added in steps 5 and 6.

1. **Estimating age-specific population data for each county:** The starting point was Census data estimating the population of children ages 0, 1, 2, 3, 4, and 5 state-wide. Lacking age-specific data by county, the assumption was made that population distribution across ages for the state matched age distribution in each county. Thus, the state-wide population distribution across ages was applied to the county-specific data that was available, which reported population in the following two relevant groupings: 0 to 4, and 5 to 9. This calculation was helpful in deriving age-specific population numbers for each of the seven southeastern Wisconsin counties.

2. **Making age-specific estimations of those who use group care:** Data from the Public Policy Forum's parent survey[31] was used to identify the population of 0-to-5-year-olds in the seven counties who use group child care. The survey was administered in late 2007 over the telephone to 430 respondents who were parents of children ages 5 and below in the seven counties. Parents reported that the children in group child care were 30% of 0-year-olds, 25% of 1-year-olds, 28% of 2-year-olds, 45% of 3-year-olds, 46% of 4-year-olds, and 25% of 5-year-olds. It is an assumption of this overall report that the rates of child care participation in the parent survey can be applied to the age-specific population of the seven counties. Calculation results that involved decimal points were rounded up.

3. **Adding staff-to-child ratios to create employment estimates:** Table 9 below illustrates licensing requirements for the ratio of staff to children for licensed group child care centers. This ratio was applied to age-specific estimates of group child care participation in the seven counties to achieve an estimate of the number of staff required to serve the relevant children in each age group. For example, estimates showed 535 1-year-olds in Kenosha using group child care. Given the 1:4 staffing ratio for this age group, 535 was divided by 4 to achieve the estimate of 133.8 Kenosha employees to serve 1-year-olds in group care. Age-specific estimates were grouped to create figures representing the number of employees needed per county.

[31] Public Policy Forum. (2008, April). Parents pleased with child care options and quality. *Research Brief.* 96 (4). http://www.publicpolicyforum.org/pdfs/ParentSurveyBrief.pdf

Table 9. Licensing requirements for number of staff	
Age of child	**Ratio of staff to children**
0-2 years	1:4
2 years – 30 months	1:6
30 months – 3 years	1:8
3-4 years	1:10
4-5 years	1:13
5-6 years	1:17
6 years and over	1:18

Source: WI Dept. of Children and Families, Bureau of Regulation and Licensing, http://dcf.wisconsin.gov/childcare/licensed/CommManuals/GCC/HFS46.05.pdf

4. **Applying FTE amounts to employment estimates:** The employment figures arrived at in step 3 underestimate employment because they wrongly assume that the target population of children are served by each full-time employee (FTE) working 8 hours per day in a child care center that is only open for 8 hours per day. In reality, it is common for child care programs to have 11 hours of operation per day, with some open up to 24 hours per day to accommodate parents working 2nd or 3rd shift. County-specific data from the Wisconsin Department of Children and Families on licensed group child care programs was valuable in fine-tuning our estimates in this area. This data offered the number of group programs per county, as well as the number of hours each center operates. Assuming that each FTE equals 8 hours of daily work, the hours of operation were divided by 8 to arrive at an FTE rate for each agency. For instance, a program open 11 hours per day divided by 8 equals an FTE rate of 1.38. On a county-by-county basis, the FTE rates of each county's group child care programs were averaged. Finally, each county's employment estimate was multiplied by that county's average FTE rate. For example, Kenosha's 604.8 employees were multiplied by a 1.37 FTE rate to arrive at a more refined direct employment estimate of 828.6 full-time employees. The resulting figures represent the estimated number of teaching staff in licensed group centers, with a regional total of 12,476.4.

5. **Estimating support staff (same as step 5 of Method 1):** In addition to estimating those who work directly with the children, support staff were also estimated using the LINCC methodology. Enrollment numbers had already been estimated as part of step 3 of Method 1. For each group provider with an enrollment greater than 80, five support staff were added, assuming a director, a custodian, a cook, a receptionist, and an off-site administrator. This added a total of 310 support staff across the seven counties.

6. **Counting family child care providers (same as step 6 of Method 1):** LINCC methodology estimates that each family or "home-based" child care facility has one employee. There are 2,575 family child care providers in the seven-county area.

7. **Compile the data for the region:**

Licensed center teaching employees:	12,476.4
Licensed center support employees:	310
Family child care employees:	2,574
Total direct employment (Method 2 Estimate):	15,360.4

APPENDIX 3: ESTIMATING PARENTS SERVED

These steps follow the Cornell Methodology Guide (Ribeiro and Warner, 2004).

1. **Find the ratio of children under 6 years of age with all available parents in the labor force to families with children under 6 years of age with all available parents in the labor force.** This must be done because many families have more than one child.

- There are 157,432 *children* under 6 with all available parents in the labor force in southeastern Wisconsin (2006 American Community Survey).
- There are 95,921 *families* with children under 6 in southeastern Wisconsin (Census 2000 SF3, P15).
    - This figure must be discounted to isolate only the families with children under 6 in which all available parents are in the labor force. The 2006 American Community Survey data shows that 67% of children under age 6 have all available parents in the labor force. This rate was applied to the "families" figure to eliminate the non-labor-force families.
    - 95,921 x .67 = 64,267 families with children under 6 in southeastern Wisconsin in which all available parents are in the labor force.
- To find the ratio of children per family, divide the two figures.
    157,432/64,267 = 2.44 children per family.

2. **Estimate the number of parents in dual earner families with both parents in the labor force.** There are 64,072 regional children under 6 in dual-earner families (Census 2000). Obviously, some of these children are in families with more than one child, so it is necessary to apply the "children per family" ratio from step 1 for an accurate estimate of parents.

(64,072 * 2 parents)/2.44 children per family = 52,518 coupled parents

3. Estimate the number of parents in single-parent families with the parent in the labor force. There are 26,280 regional children under age 6 in single-parent families living with a mother who is in the labor force (Census 2000). There are 6,964 regional children under age 6 in single-parent families living with a father who is in the labor force (Census 2000). First, the children living with mothers must be added to the children living with fathers to estimate the total children under age 6 in the region who are living with single parents. Then, our ratio of children per family must be applied to allow the result to be in "numbers of parents."

26,280 + 6,964 = 33,244 children under 6 in single-parent families

33,244 children / 2.44 children per family = 13,625 single parents

4. Calculate the total estimated working parents associated with children under 6 years of age in the region from families in which all available parents are in the labor force. To do this the result from step 2 was added to the result from step 3 (relevant two-parent family parents plus relevant single-

parent family parents). The estimate shows that 66,143 parents in southeastern Wisconsin have children under age 6 and are from families in which all available parents are in the workforce (i.e., not families with a stay-at-home mother or father).

52,518 + 13,625 = 66,143 parents

While not all parents have children in *paid* child care, all families in which all available parents are working must devise some kind of child care arrangement – without this, they would not be able to work.

5. Estimate working parents using paid child care. In states with a Dependent and Child Care Tax Credit, a further estimate of working parents using paid child care can be made, but Wisconsin's taxes do not have this feature. Information from the Public Policy Forum's 2007 survey of 430 parents in southeastern Wisconsin regarding child care is used. Survey results indicate that 57% of coupled parents of children younger than 6 from households in which all available parents are working used some type of paid child care. Forty-six percent of working single parents in the survey used paid child care. Applying these percentages to the figures on working parents:

13,625 single parents (.46) = 6,268 working single parents using paid child care

52,518 coupled parents (.57) = 29,935 working coupled parents using paid child care

6,268 + 29,935 = **36,203 working parents of children under 6 in southeastern Wisconsin (from families in which all available parents are in the labor force) using paid child care**

APPENDIX 4: MULTIPLIERS AND INDUSTRY COMPARISON DATA

Multiplier data is IMPLAN 2000 figures for the state of Wisconsin accessed via the report:

Liu, Zhilin, Ribeiro, R. and Warner, M. (2004). *Comparing Child Care Multipliers in the Regional Economy: Analysis from 50 States.* Linking Economic Development and Child Care Research Project, Cornell University.

Employee and gross receipts data for all industries except child care is from the 2002 Economic Census. Child Care employee and gross receipts figures are estimates made by the Public Policy Forum.

Table 10. Multipliers and Industry Data for the 7-County Southeast Wisconsin Region

Industry	**Direct Employment**	**Type II Employment Multiplier**	**Employment Impact** *(Direct Employment x Type II)*	**Annual Gross Receipts** *(in $1000s)*	**Type II Output Multiplier**	**Economic Impact** *(Receipts x Type II)*
Child Care, PPF Estimate (IMPLAN 499)	Est. 12,400	1.58	19,592	Est. $660,797	1.98	$1,308,378
Eating and Drinking (IMPLAN 454)	60,659	1.3	78,857	$2,074,620	1.41	$2,925,214
Apparel & Accessory Stores (IMPLAN 452)	8,485	1.09	9,249	$918,464	1.22	$1,120,526
Hotel & Lodging (IMPLAN 463)	8,040	1.19	9,568	$399,308	1.33	$531,080
Tool & Die* (IMPLAN 321)	13,309	1.25	16,636	$2,970,398	1.24	$3,683,294

*Tool and Die refers to Metalwork Machinery Manufacturing (NAICS 33351) for Milwaukee and Waukesha Counties, and Machinery Manufacturing (NAICS 333) for the remaining counties.