

# The Economic Impact of Formal Childcare in Travis County

United Way Capital Area



 PRESENTED BY 



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## Summary

The impact of formal childcare touches the Austin economy in three main ways. First, the formal childcare sector is a significant industry in its own right. TXP estimates that formal childcare facilities in Travis county had a total of \$232.9 million in gross revenue during 2006, in the process employing approximately 5,400 people. To put these figures in context, this employment base is slightly larger than the number of software jobs in Travis county that same year.

Second, the childcare industry facilitates success in other industries by allowing parents to participate more fully in the labor force. TXP's calculations suggest that, absent the presence of formal childcare, the equivalent of \$242.9 million in wages and about 8,000 jobs would be lost from the local economy.

When the ripple effects associated with each of the above are factored into the equation, the total impact is almost \$2 billion in economic activity, \$590.1 million in earnings, and over 20,000 jobs.

Beyond these measurable effects, individual employers benefit because childcare attracts and retains new employees and increases productivity by reducing employee turnover and absenteeism. In many ways, accessible, affordable childcare is like transportation and housing. Without it, employees may experience barriers to working, and their employers and the local economy as a whole suffer.

The third area of impact is not easily measured, but may well be greater than the first two. The impacts outlined above are a snapshot from a given year, in this case 2006. Over time, formal childcare programs play a more dynamic role in the growth and development of the economy, especially those of high quality. For example, recent research on early brain development demonstrates that quality childcare improves children's health and school readiness. Once a child is in school, the quality of early education opportunities is linked to positive outcomes for children in all income brackets, though studies have shown particularly striking findings in children from low-income families. The positive impact extends forward, with longer-term linkage to reduced public spending in areas such as criminal justice and welfare assistance.

Taken together, it is clear that formal childcare is an important element of our current and future economy, and should be considered a key asset in Austin's economic development portfolio. In that light, policy initiatives designed to increase the level of and access to affordable, high-quality childcare (perhaps using tools such as increased funding, inclusion of childcare facilities in local public sector facilities planning, and private-sector tax and regulatory incentives) will likely pay significant dividends.

## Overview

Childcare typically has been seen through a human capital or social welfare lens, rather than as a key feature of economic development. This view is beginning to change, as a number of economists have begun to evaluate the importance of early education to long-term human development. The Cornell Linking Economic Development and Childcare project reflects this new orientation, and has used the symbol of the three petals of a trillium flower to represent the three most distinctive dimensions of the economic importance of childcare: its implications for child development, parental labor force mobilization, and regional economic development.

**Figure 1: Threefold Importance of the Childcare Sector**



Mildred E. Warner (an Associate Professor at the Department of City and Regional Planning at Cornell) summarizes the interaction as follows:

Child development researchers are concerned with the impact of early care and education (ECE) on long-term cognitive and social skills. Labor researchers are concerned with the labor mobilization and labor productivity of parents afforded by quality childcare. Regional economists are concerned with the employment and output contributions to the regional economy of the childcare sector and the strength of economic linkages between childcare and other sectors. Work in these three arenas has rarely intersected. However, the impacts on children cannot be segregated from the welfare of parents; the impacts on parents cannot be divorced from the health of the economy in which they live; and the health and sustainability of the economy cannot be separated from the prospects for its children.

This new, broader view of the connection between the economy and childcare is evident in the following comments from the local Childcare Council:

Childcare is a critical part of 21<sup>st</sup> century Austin. In Austin, as in the rest of the United States, the majority of parents with young children combine paid work with their family responsibilities. Many families depend on income from two parents, and about one-third of families with children in Austin are headed by single parents who must work to provide the basics for their families. Most of these parents need childcare in order to work - they need safe and convenient settings where their children will receive loving attention, healthy activities, and opportunities to learn. Childcare is not just a personal issue for parents. It is a neighborhood and community service affecting quality of life and the economic future of the city. Just as good schools attract skilled and well-educated workers to a city, high quality and available childcare helps to build and maintain a stable, high-quality work force.

In light of the above, TXP was tasked by the United Way Capital Area with evaluating the local economic impact of childcare, specifically “formal” or center-based childcare. Execution of this task required specific decisions regarding what could be appropriately measured at the local level. As a result, the study is divided into three broad sections: 1) a discussion of the literature related to the longitudinal implications of ECE, especially as it relates to the children themselves; 2) a literature review of the labor force impacts to families and employers; and 3) a measurement of the economic impact during 2006 of the formal childcare sector itself and the parents/caregivers in Travis County. Throughout the study, the term “formal childcare” is taken to mean childcare that is licensed and/or accredited, including preschool programs.

## Discussion of Longitudinal Implications

The effects of high quality early care and education programs can be viewed on a number of different levels and at varying times over the life cycle. For example, Morrissey and Warner describe impacts on the macrosystem level (growth in the regional economy over time), exosystem (parents), and microsystem (children’s long term human development).<sup>1</sup> This section examines the effects of ECE longitudinally, divided into the preschool and post-preschool years. Within each time frame, effects are discussed on a variety of levels, including the individual child, the family system, the workplace, and the economy.

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<sup>1</sup> Morrissey, Taryn W. & Warner, Mildred E. (2007). *Why early care and education deserves as much attention, or more, than prekindergarten alone*. Applied Development Science, Vol. 11, No. 2, 57-70.

**Table 1: Summary of Longitudinal Implications**

Type of Economic Research	Short-term Effects	Medium-term Effects	Long-term Effects
<b>Cost/Benefit Analysis:</b> <ul style="list-style-type: none"> <li>• Perry Preschool</li> <li>• Abecedarian Intervention</li> <li>• Chicago Child-Parent Center</li> </ul>	<b>For child:</b> <ul style="list-style-type: none"> <li>• Enhanced academic achievement</li> <li>• Improved health/nutrition</li> <li>• Increased well-being/less abuse</li> <li>• Increased non-cognitive skills and social competence during school years</li> </ul>	<b>For society/economy:</b> <ul style="list-style-type: none"> <li>• Greater school system efficiency                             <ul style="list-style-type: none"> <li>◦ Reduction in special education</li> <li>◦ Reduction of grade repetition</li> <li>◦ Higher student learning</li> </ul> </li> <li>• Reduction in abuse/neglect</li> <li>• Lower reliance on public health care</li> </ul>	<b>For child:</b> <ul style="list-style-type: none"> <li>• Higher likelihood of graduation/college enrollment</li> <li>• Higher wages and employment potential</li> <li>• Lower teen pregnancy</li> <li>• Less delinquent</li> </ul> <b>For society/economy:</b> <ul style="list-style-type: none"> <li>• Sound basic education</li> <li>• Increased income tax revenues</li> <li>• Lower welfare dependence</li> <li>• Reduction in delinquency and crime</li> </ul>
<b>Macroeconomic Studies on the Longitudinal Impact on Human Capital</b> , e.g. Work of Dr. James J. Heckman, University of Chicago	Builds on findings from Cost/Benefit Analysis	Builds on findings from Cost/Benefit Analysis	<b>For labor market/economy:</b> <ul style="list-style-type: none"> <li>• Dynamic complementarities – more able people acquire more skills; more skilled people become more able</li> <li>• Younger children have a longer period of time to recoup investments</li> </ul>
<b>Microeconomic Studies on the Longitudinal Impact of Human Capital</b> , e.g., Work of Art Rolnick, Rob Grunewald, Federal Reserve Bank of Minneapolis	<ul style="list-style-type: none"> <li>• Builds on findings from Cost/Benefit Analyses</li> <li>• Education savings, especially compared to other civic investments, e.g. stadiums</li> </ul>	Builds on findings from Cost/Benefit Analyses	<b>For society/ economy:</b> <ul style="list-style-type: none"> <li>• General public benefits from less disruptive students and fewer crimes</li> <li>• Parents transfer new skills to younger siblings</li> <li>• Benefits to future generations (more education, income, less crime)</li> <li>• Break the chain of poverty</li> </ul>

Source: Friedman, Dana E. (October 2004). *The new economics of preschool*. Early Childhood Funders' Collaborative, pp 4-5, TXP

### Effects in the Preschool Years

There has been considerable enthusiasm among economists in the potentially large returns to long-term human development offered by quality ECE programs. The three most well-known long-term studies are Abecedarian, Chicago Parent Child, and Perry Preschool. All three of these programs, and in fact all quality ECE programs, are based on the science of early brain plasticity. Children are

born with brains that are relatively underdeveloped, and in the early years the ensuing developmental process involves a highly dynamic interaction between children’s individual genetic predispositions and their life experiences. These three programs provided positive learning experiences and supportive, growth-promoting environments at a time when the children’s brain circuits were being built. They promoted the development of sturdy brain architecture that provided a stronger foundation for future achievement.

The programs, begun in the 1960s, 1970s, and 1980s and continued to the present time, provide strong evidence of the impact of ECE as an economic investment. Two of the studies, High/Scope Perry Preschool and Abecedarian, assigned participants to either an experimental group that participated in the high-quality early childhood program or to a control group that didn’t participate. The Chicago Child-Parent Centers researchers compared participants in their program to a valid comparison group of children who did not participate. If one compares the intervention and control groups on the factors used to compute the benefit/cost analysis when the children in the study were at a similar point in time (in their 20s), the differences are dramatic, as shown in the following table.

**Table 2: Outcomes and Benefit-Cost of Selected Programs**

	Perry Preschool	Carolina Abecedarian	Chicago Child-Parent Centers
<b>Outcomes</b>			
Increased short-term IQ	Yes	Yes	Not measured
Increased long-term IQ	No	Yes	Not measured
Increased long-term achievement	Yes	Yes	Yes
Special education	37% vs. 50%	25% vs. 48%	14% vs. 25%
Retained in grade	35% vs. 40%	31% vs. 55%	23% vs. 38%
High school graduation	65% vs. 45%	67% vs. 51%	50% vs. 39%
Arrested by 21	15% vs. 25%	45% vs. 41%	17% vs. 25%
<b>Benefit-Cost Results</b>			
Cost	\$16,264	\$36,929	\$7,417
Benefit	\$277,631	\$139,571	\$52,936
Benefit/Cost Ratio	17.07	3.78	7.14

Source: Barnett, W. Steven, and Ackerman, Debra J. (2006). *Costs, benefits, and long-term effects of early care and education programs: recommendations and cautions for community developers*. Journal of the Community Development Society, Vol. 37, No. 2.

In summary, each of the studies examined the lasting impact of its high-quality early childhood program and found significant savings over the costs of these programs. The study authors caution, however, that returns will depend on the role of person, process, and context. Although many model programs focus on the most disadvantaged, research also shows significant gains for middle

income children as well.<sup>2</sup> Teacher education and staffing ratios vary significantly among programs, and these quality differences help explain why returns from model programs may not be found in the ECE sector at large. Policy that ignores findings about program quality (care giver qualifications and teaching practices, class size, teacher/child ratios, and curriculum) is unlikely to yield intended benefits. Differences in context are critical in explaining differences in longer-term education performance of children. Baseline social conditions, peer effects, proximity to tipping points, and similar factors all mediate the impacts of any given program intervention.<sup>3</sup> Galinsky examined the three successful programs noted above and listed probable causes for their significant economic impact<sup>4</sup>:

- They began early (from the first months of life up to age three)
- They had well-educated, well-trained and well-compensated teachers – with resulting low staff turnover.
- They maintained small class sizes and high teacher-child ratios.
- They were intensive programs (many contact hours with each child).
- They transitioned into the early elementary years.
- They provided parent education and support.
- They focused on children’s learning – not just their achievement.
- Interventions focused on the whole child – the child’s intellectual, social, emotional, and physical growth and well-being.
- The relationship between the teacher and child was seen as central to the child’s learning.
- Teachers received ongoing learning and were encouraged to continually improve their teaching practice.

A 2005 study by the RAND Corporation was designed to provide an objective review and synthesis of current research on the costs and benefits of early childhood programs.<sup>5</sup> The study showed that the period from birth to age 5 is one of opportunity and vulnerability for healthy physical, emotional, social, and cognitive development, yet a sizable fraction of children face risks that may limit their development in the years before school entry. Studies have shown that nearly half of a recent cohort of kindergarten children in the United States faced at least one of four such risk factors.

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<sup>2</sup> Gormley, W. T., Jr., Gayer, T., Phillips, D., & Dawson, B. (2004). *The effects of universal pre-k on cognitive development*. Washington, DC: Public Policy Institute.

<sup>3</sup> Warner, Mildred E. (2006). *Overview: Articulating the Economic Importance of Childcare for Community Development*. COMMUNITY DEVELOPMENT: Journal of the Community Development Society, Vol. 37, No. 2.

<sup>4</sup> Galinsky, Ellen (February 2006). *The economic benefits of high-quality early childhood programs: what makes the difference?* The Committee for Economic Development: Washington, DC.

<sup>5</sup> Karoly, Lynn A., Kilburn, M. Rebecca & Cannon, Jill S. (2005). *Early Childhood Interventions*. The RAND Corporation: Santa Monica, CA.

Variations in early childhood experiences are manifested in disparities in school readiness, and these gaps often persist.<sup>6</sup>

### Effects in Post-Preschool Years

The child-care environment need not and should not be a holding pen for children while their parents work. A substantial amount of sociological research suggests that early introduction of children to social settings such as they experience in childcare makes for much better adapted adolescents, both in terms of socialization and also cognitive functioning. Multi-cultural settings are particularly effective in producing tolerance, acceptance, and even appreciation of cultural diversity. The childcare environment can also substantially ease the transition of younger children into the educational system, and there is growing evidence that the earlier the learning experience begins for children, the more able they are to take advantage of education.

Although these factors are typically considered to be “social” in nature, they can have profound potential future economic impacts. For one thing, children who are more receptive to schooling in the future likely will make for a better-trained and more productive labor force.

Beyond the immediate positive economic impacts of increased earnings experienced by the parents, high-quality educational and child-care service for young children can generate long-term economic and social returns. For example, a 2004 article in *The New York Times Magazine* detailed the positive impact of the High/Scope Perry efforts on long-term outcomes of the program’s participants:<sup>7</sup>

The power of education to level the playing field has long been an American article of faith...But that belief has been undermined by research findings -- seized on ever since by skeptics -- that federal programs like Head Start, designed to benefit poor children, actually have little long-term impact.

Now evidence from an experiment that has lasted nearly four decades may revive Horace Mann's faith. "Lifetime Effects: The High/Scope Perry Preschool Study Through Age 40," was released earlier this week. It shows that an innovative early education program can make a marked difference in the lives of poor minority youngsters -- not just while they are in school but for decades afterward...

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<sup>6</sup> Ibid.

<sup>7</sup> Kirp, David L. (November 21, 2004). *Life way after head start*. New York Times Magazine. Retrieved January 15, 2008 from <http://www.nytimes.com/2004/11/21/magazine/>.

By almost any measure we might care about -- education, income, crime, family stability -- the contrast with those who didn't attend Perry is striking. When they were 27, the preschool group scored higher on tests of literacy. Now they are in their 40's, many with children and even grandchildren of their own. Nearly twice as many have earned college degrees (one has a Ph.D.). More of them have jobs: 76 percent versus 62 percent. They are more likely to own their home, own a car and have a savings account. They are less likely to have been on welfare. They earn considerably more -- \$20,800 versus \$15,300 -- and that difference pushes them well above the poverty line...

The newest report attaches a dollar-and-cents figure to this good news. Economists estimate that the return to society is more than \$250,000 (calculated in 2000 dollars) on an investment of just \$15,166 -- that's 17 dollars for every dollar invested.

## Discussion of Near-Term Economic Implications

### Family/Workforce Impact

It is a popular topic for journalists to write about the exponential rise in childcare costs. According to the National Association of Childcare Resources and Referral Agencies, for the first time this year, child-care costs have outpaced what the average family spends on food and are rising at twice the cost of inflation.<sup>8</sup> After paying the mortgage, health insurance premiums, transportation costs and childcare fees, today's two-income families have less money left over than the one-income family did a generation ago. The inability to find and/or maintain affordable childcare causes many middle-class families to question whether it makes sense for both parents to work, particularly when paying for care for more than one child. In addition to the quality of the labor pool diminishing, the economic consequences of one parent leaving the workforce include lost wages (current and future), lower family spending, and loss of tax revenue, to name a few.

In lower-income families, where staying at home is not an option, rising childcare costs can have dire implications. While high income families (those in the highest 20 percent of family earnings) devote 6.1 percent of their income to formal day care expenditures, low income families (those in the lower 40 percent) devoted 18.4 percent of total household income to formal day care.<sup>9</sup>

<sup>8</sup> Barack, Lauren (January 17, 2008). *The child-care crisis*. Retrieved January 17, 2008 from <http://articles.moneycentral.msn.com/Investing>

<sup>9</sup> Kimmel, Jean (2006). *Childcare, female employment, and economic growth*. Journal of the Community Development Society, Vol. 37, No. 2.

Numerous national studies have found that public assistance for childcare to lower-income families has positive economic and social benefits. According to a report published by the Urban Institute, *Getting Help with Childcare Expenses (2003)*:

Childcare can be very expensive, and employed parents with low or moderate incomes may find that they either need to get help in paying for it, or avoid paying for it at all. Getting help with childcare expenses may broaden a family's choices in at least two ways. First, affordable childcare increases parents' employment choices. If childcare is more affordable, a single parent may be better able to remain off welfare, a parent in a two-parent family who has been staying at home may prefer to go back to work, and a parent with school-age children may choose to work a full day instead of only during school hours. Second, more affordable childcare broadens parents' childcare choices. Although the link between cost and quality is not direct, elements of high-quality childcare - such as low student-to-teacher ratios - are expensive to provide. Thus, a family with help in paying for childcare expenses may be able to afford a high-quality program that would otherwise have been out of reach financially.

In addition to being expensive, there are other issues related to childcare that affect families – specifically that quality care is in short supply or unreliable. In her literature review, Kimmel notes shortages of care for infants (children ages 0-2), off-hours care (care outside the standard hours of 7 am to 6 pm), after-school and summer care, and care of children who are mildly sick. She also notes that families in rural areas face larger challenges finding childcare than families in urban areas.<sup>10</sup>

Childcare stability and its linkages with parental employment is not well researched, but Kimmel reports on some statistics that include mothers' self-reports concerning days lost as a result of childcare problems.<sup>11</sup> Overall, 8.8 percent of working mothers report losing work hours because of childcare problems. The percentages varied depending on the type of childcare arrangement; specifically it was reported that:

- 11.8 percent of working mothers of children in family day care report losing work days because of childcare problems.
- 14.2 percent of mothers relying on sitter care report such problems.
- 8.5 percent of mothers relying on formal day care settings report such problems.

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<sup>10</sup> Ibid.

<sup>11</sup> Ibid, p. 78.

Kimmel also reports on an Ohio study that documented a much higher incidence of lost work because of childcare problems.<sup>12</sup> In this 1998 study, it was found that:

- One-fifth of working parents reported work disruptions because of childcare.
- One-fifth reported that they or their spouse had arrived late for work, left work early, or missed work entirely because of a childcare problem.
- Working parents with young children reported missing an average of 4.2 work days each year because of an ill child, and 1.1 additional days for other unexpected childcare needs.

### Employer Impact

Quality child-care services can also enhance the productivity of the labor force. In a 2000 American Business Collaboration report, 63 percent of member employees reported improved productivity while using quality dependent care.<sup>13</sup> Businesses clearly have a stake in ensuring that parents are enabled to work.

Additionally, workers who are concerned about the status of their children during the workday may not pay as close attention to the task at hand as those who are more comfortable with their child-care arrangements. Such workers are also more likely to take unscheduled time away from the job to attend to minor problems their children are encountering. Twenty nine percent of employed parents experienced some kind of childcare breakdown in the past three months.<sup>14</sup> These childcare breakdowns were associated with absenteeism, tardiness, and reduced concentration at work, costing businesses \$3 billion annually in the United States.

According to the Austin Area Employers' Collaborative, businesses that invest in the many options available regarding their employees' childcare and other dependent care needs reap the following benefits:<sup>15</sup>

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<sup>12</sup> Kunz Center for the Study of Work & Family (1998, July 8). *Childcare woes lead to missed work for one-fifth of parents, University of Cincinnati Study finds*, Press Release, as reported in Kimmel (2006).

<sup>13</sup> ABT Associates (2000). *National report on work and family*. Retrieved January 17, 2008 from [http://www.abcdpendentcare.com/docs/archived\\_news.shtml](http://www.abcdpendentcare.com/docs/archived_news.shtml).

<sup>14</sup> Bond, J, Galinsky, E., and Swanberg, J. (1998). *The 1997 national study of the changing workforce*. New York, NY: The Families and Work Institute.

<sup>15</sup> The Austin Area Employers' Collaborative is a coalition of small, medium and large employers promoting the availability, accessibility, and affordability of high quality dependent care to benefit the current and future workforce. Information retrieved on October 4, 2007 from <http://www.familyconnectionsonline.org/FamilyConnections>.

- Increased productivity
- Higher morale
- Lower employee turnover
- Better recruitment
- Lower absenteeism
- Stronger and more positive community image

One study showed that an employer-sponsored childcare program can reduce employee turnover by 37 to 60 percent.<sup>16</sup> Another study showed that a 7 percent decrease in employee turnover led to increases of more than \$27,000 in sales per employee and almost \$4,000 in profits per employee.<sup>17</sup>

### Examples of Employer Assistance

As an increasing number of employees struggle to balance the demands of their work and home lives, employers are examining the costs of offering various work/family programs. As mentioned elsewhere in this report, quality childcare for employees is important to employers because it improves productivity, reduces absenteeism, cuts turnover, and can increase company value. There are a number of way in which employers can provide assistance to working parents, including<sup>18</sup>

- Flexible work schedules – includes flexible hours, compressed work weeks, telecommuting, job sharing, part-time schedules and voluntary reduced work time.
- Financial assistance – includes vouchers or subsidies that reduce costs for childcare services.
- Information and referral – includes referrals to childcare services and/or to a local childcare resource and referral agency, newsletters, bulletin boards, and individual case management.
- Direct services – on-site or nearby childcare facilities, reserved slots at local centers or family day care homes, back-up or emergency care supported by the employer.
- Community partnerships – arrangements with local organizations serving children and families.

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<sup>16</sup> Ranson, C. & Burud, S. (1988). *Productivity impact studies of an on-site childcare center*. Los Angeles, CA: Burud and Associates.

<sup>17</sup> Huselid, M.A. and Becker, B. I. (1995). *The strategic impact of human resources: Building high performance work systems*. New York, NY: Cooper and Lybrand L.L.P.

<sup>18</sup> *The Daily Parent* (2001). National Association of Childcare Resource and Referral Agencies. Retrieved October 4, 2007 from [www.childcareaware.org](http://www.childcareaware.org).

In a 2004 report on childcare and parent productivity, Shellenback reports a study that examined “family supportive companies.” These companies consistently outperformed the performances of the Standard and Poors 500 companies over the past three years.<sup>19</sup> Another study by Vanderbilt University and Hewitt Associates found that the companies on the *Fortune’s 100 Best Companies to Work For* list outperformed similar companies and showed substantial financial performing advantage (i.e., showed cumulative stock returns 50 percent higher than the market norm). The researchers found that organizations with progressive human resource programs have higher operating incomes, higher returns on assets, and spend more money on research and development. In sum, being an “employer of choice” was related to profitability.<sup>20</sup>

Locally, T3, a marketing services agency, has instituted a program called “T3 and Under” which enables new moms and dads to bring their infants to work. T3 owner Gay Gaddis reports that the program has had an overall positive effect on the company. Having children around adds to the family-friendly atmosphere, and increases employee morale and retention. From a productivity standpoint, the program benefits work and client relationships from the ability to retain key employees. Although Gaddis can’t measure in hard numbers the economic impact of their family-friendly policies, T3 is routinely named one of the best places to work in Austin.<sup>21</sup>

## Economic Impact Calculations

### Methodology Overview

As outlined above, the economic and fiscal impact of childcare is both dynamic and longitudinal, as the influence of childcare extends to corporate recruitment and retention in the near term and ultimate workforce capacity once its recipients enter the labor force. These impacts are virtually impossible to accurately measure in any sort of systematic fashion, and so no attempt has been made to quantify their impact.

The economic impact analysis covers two direct areas of impact: 1) the impact of formal childcare itself; and 2) the impact of formal childcare on local on labor force participation. In both cases, the year of analysis is 2006, based on the

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<sup>19</sup> Shellenback, Karen (December 2004). *Childcare and parent productivity: making the business case*. Ithaca, NY: Cornell University. Retrieved on December 17, 2008 from <http://government.cce.cornell.edu/doc/pdf/ChildCareParentProductivity.pdf>.

<sup>20</sup> Vanderbilt University and Hewitt Associates (2000). Reported in Shellenback’s 2004 report on *Childcare and parent productivity: making the business case* (retrieved from <http://government.cce.cornell.edu/doc/pdf/ChildCareParentProductivity.pdf>)

<sup>21</sup> *In the Spotlight Interview with Gay Gaddis* (2007). Retrieved October 23, 2007 from <http://www.mommytrackd.com/gay-gaddis>.

most recently available data from 2006 Childcare Survey conducted by the United Way. The key assumptions and parameters underlying each are as follows:

### **Assumptions on Formal Childcare Direct Impact**

1. Given an estimated 41,667 formal childcare slots in Travis County and a calculated capacity utilization of 85.7 percent, TXP estimates that an average of 35,699 children were enrolled in formal childcare in Travis county during 2006.
2. On average the cost per child across all age groups and facilities was \$6,507. As a result, direct revenue at Travis county formal childcare facilities during 2006 totaled \$232.9 million.

## Assumptions on Workforce Direct Impact

1. During 2006, the average wage in Austin was \$39,910. Using national data on wage differentials and local data on labor force participation by gender, TXP estimates that women were paid an average local wage of \$35,074, while men earned \$43,408. For purposes of this analysis, the workforce impacts of childcare are assumed to fall entirely on women.
2. Inquiry data suggests 86.1 percent of those using formal childcare in Travis County are doing so to support employment, which translates to 30,737 children who are in care to facilitate their parents labor force participation.
3. National data from the Survey of Income and Program Participation (SIPP) is available on patterns of childcare use by type (Parent, Relative, Non-Relative, and Center (formal childcare)) crossed against hours worked, secondary childcare arrangements, etc. In order to estimate the impact on local labor-force participation, the assumption was made that ECE is not available, and the all parents substitute non-relative care for center-based care. Given the proportions in the SIPP, this would have an impact on 34.2 percent of working mothers who use Travis County childcare.
4. A range of academic literature indicates that there is direct relationship between the price of childcare and labor force participation. According to Kimmel, “researchers have estimated that the childcare price elasticity of employment for mothers ranges from approximately 0.2 to 0.8, implying that a 10 percent increase in the price of childcare would cause a 2 to 8 percent reduction in maternal employment probabilities.<sup>22</sup> For purposes of this analysis, the elasticity is set toward the low end of the estimated range, at 0.35.<sup>23</sup>
5. According to the Bureau of Labor Statistics, the average wage paid to childcare workers in Travis County during 2006 was \$9.42/hour. If formal childcare were unavailable, the assumption is that non-relative care would have to be substituted, at an annual cost of \$15,837.<sup>24</sup> This is an implied prices increase of 243.4 percent (compared to the average formal childcare cost of \$6,507). Using the 0.35 elasticity figure in combination with the 34.2 percent figure in bullet #3, the impact is an overall reduction in hours worked of 29.2 percent. The result is lost wages in 2006 of \$314.3 million, which partially offset by increased wages of \$72.1 million paid to new childcare workers who would now employed outside the formal childcare sector. As a result, the net wages lost equal \$242.2 million.

<sup>22</sup> Kimmel, Jean (Summer 2006). Childcare, Female Employment, and Economic Growth. *Journal of the Community Development Society*, Vol. 37, Number 2, p. 77.

<sup>23</sup> Discussion in several articles on this topic suggests that -0.4 to -0.5 is perhaps the most applicable estimate. However, the size and scope of this exercise warrants erring on the conservative side.

<sup>24</sup> Assume 50 weeks per year at 33.6 hours worked per week (which is based on SIPP data). Note that this assumption does not include additional payroll-related costs, such as taxes, benefits, etc. Also note that this assumption assumes adequate labor market supply.

6. The loss of \$242.2 million in wages reflects a loss in direct economic activity of \$773.2 million.

Taken together, the direct impact of formal childcare and the potential loss of employment elsewhere in the economy if center-based care did not exist was estimated to be just over \$1 billion in 2006 - \$232.9 million from formal childcare operations and \$773.2 million from reduced workforce availability.

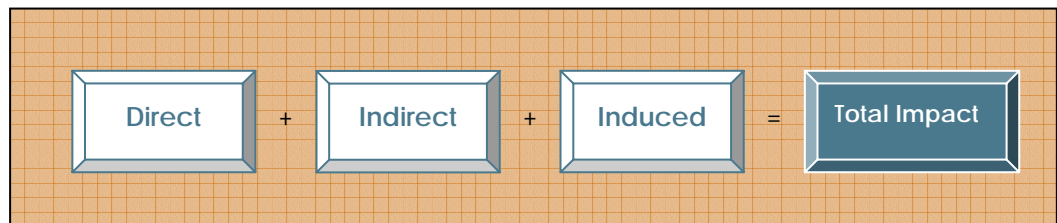
### Calculation of the Ripple Effects

The economic impacts extend beyond the direct activity outlined above. In an input-output analysis of new economic activity, it is useful to distinguish three types of expenditure effects: direct, indirect, and induced. Direct effects are production changes associated with the immediate effects or final demand changes. The payment made by an out-of-town visitor to a hotel operator is an example of a direct effect, as would be the taxi fare that visitor paid to be transported into town from the airport.

Indirect effects are production changes in backward-linked industries caused by the changing input needs of directly affected industries – typically, additional purchases to produce additional output. Satisfying the demand for an overnight stay will require the hotel operator to purchase additional cleaning supplies and services, for example, and the taxi driver will have to replace the gasoline consumed during the trip from the airport. These downstream purchases affect the economic status of other local merchants and workers.

Induced effects are the changes in regional household spending patterns caused by changes in household income generated from the direct and indirect effects. Both the hotel operator and taxi driver experience increased income from the visitor's stay, for example, as do the cleaning supplies outlet and the gas station proprietor. Induced effects capture the way in which this increased income is in turn spent by them in the local economy.

**Figure 2: The Flow of Economic Impacts**



Once the ripple effects have been calculated, the results can be expressed in a number of ways. Four of the most common are “Output,” equivalent to sales; “Value-Added,” which describes the difference between a firm’s top-line revenue and its cost of goods sold (exclusive of labor-related costs); “Earnings,” which

represents the compensation to employees and proprietors; and “Employment,” which refers to permanent, full-time jobs that have been created in the local economy. The interdependence between different sectors of the economy is reflected in the concept of a “multiplier.” An output multiplier, for example, divides the total (direct, indirect and induced) effects of an initial spending injection by the value of that injection – i.e., the direct effect. The higher the multiplier, the greater the interdependence among different sectors of the economy. An output multiplier of 1.4, for example, means that for every \$1,000 injected into the economy, another \$400 in output is produced in all sectors.

### Findings

The total impact of \$1 billion in formal childcare and lost employment translates into a total economic impact of \$1.9 billion worth of economic activity, \$1.2 billion in value-added, \$590.1 million in earnings, and approximately 20,600 jobs. The breakdown follows.

**Table 4: Detailed Impact of Formal Childcare Operations**

Industry Sector	Output	Earnings	Employment
Agriculture, etc.	\$1,579,576	\$232,222	11
Mining	\$998,849	\$206,420	1
Utilities	\$7,921,107	\$1,496,545	8
Construction	\$4,111,542	\$1,625,557	23
Manufacturing	\$15,726,069	\$3,251,115	38
Wholesale trade	\$13,728,371	\$4,670,252	44
Retail trade	\$17,956,058	\$6,553,834	151
Transportation & warehousing	\$5,830,492	\$2,477,040	34
Information	\$13,519,309	\$3,767,164	38
Finance and insurance	\$19,256,885	\$5,315,314	56
Real estate and rental and leasing	\$46,945,917	\$3,741,362	68
Professional & scientific services	\$13,194,102	\$6,682,847	73
Management of companies	\$2,299,676	\$1,264,322	11
Administrative & waste services	\$10,476,303	\$4,902,474	123
Educational services	\$3,182,380	\$1,548,150	35
Health care and social assistance	\$248,968,996	\$99,288,006	5,536
Arts, entertainment, and recreation	\$2,648,112	\$1,135,310	35
Accommodation & food services	\$12,822,438	\$5,392,722	195
Other services	\$10,522,761	\$3,638,152	83
<b>Total</b>	<b>\$451,688,947</b>	<b>\$157,188,808</b>	<b>6,561</b>

Source: TXP

**Table 5: Detailed Impact of Formal Childcare on Workforce**

Industry Sector	Output	Earnings	Employment
Agriculture, etc.	\$14,189,196	\$1,650,992	140
Mining	\$3,635,210	\$694,673	6
Utilities	\$25,479,581	\$4,309,011	44
Construction	\$46,999,593	\$16,687,769	418
Manufacturing	\$98,280,187	\$21,633,350	446
Wholesale trade	\$52,333,050	\$16,086,412	268
Retail trade	\$142,007,125	\$46,605,601	1,927
Transportation & warehousing	\$26,628,014	\$9,866,995	350
Information	\$61,940,504	\$19,574,182	323
Finance and insurance	\$104,996,744	\$28,517,684	543
Real estate and rental and leasing	\$293,383,526	\$15,368,861	514
Professional & scientific services	\$123,410,305	\$57,506,388	1,012
Management of companies	\$6,439,637	\$3,179,352	49
Administrative & waste services	\$65,268,411	\$27,373,562	1,163
Educational services	\$109,175,793	\$47,751,130	2,005
Health care and social assistance	\$110,479,658	\$54,373,470	1,357
Arts, entertainment, and recreation	\$25,339,131	\$9,839,849	486
Accommodation & food services	\$110,844,054	\$41,329,376	2,558
Other services	\$32,534,731	\$10,580,784	448
<b>Total</b>	<b>\$1,453,364,450</b>	<b>\$432,929,441</b>	<b>14,056</b>

Source: TXP

**Table 6: Combined Detailed Impacts**

Industry Sector	Output	Earnings	Employment
Agriculture, etc.	\$15,768,771	\$1,883,215	151
Mining	\$4,634,059	\$901,093	7
Utilities	\$33,400,688	\$5,805,555	52
Construction	\$51,111,135	\$18,313,326	440
Manufacturing	\$114,006,257	\$24,884,465	485
Wholesale trade	\$66,061,420	\$20,756,664	312
Retail trade	\$159,963,184	\$53,159,435	2,078
Transportation & warehousing	\$32,458,506	\$12,344,035	385
Information	\$75,459,813	\$23,341,346	361
Finance and insurance	\$124,253,629	\$33,832,998	598
Real estate and rental and leasing	\$340,329,443	\$19,110,223	581
Professional & scientific services	\$136,604,408	\$64,189,235	1,085
Management of companies	\$8,739,314	\$4,443,674	60
Administrative & waste services	\$75,744,714	\$32,276,036	1,286
Educational services	\$112,358,173	\$49,299,279	2,040
Health care and social assistance	\$359,448,654	\$153,661,476	6,893
Arts, entertainment, and recreation	\$27,987,243	\$10,975,159	521
Accommodation & food services	\$123,666,492	\$46,722,098	2,753
Other services	\$43,057,492	\$14,218,936	531
<b>Total</b>	<b>\$1,905,053,397</b>	<b>\$590,118,249</b>	<b>20,618</b>

Source: TXP

## Conclusions

In the near-term, the role of the formal childcare in the economy is largely on the “demand” side, as operations of facilities themselves and enabling of workforce create an impact on the local economy that can be estimated for a given year. Longer-term, childcare shifts more to the “supply” side of the equation, with quality considerations an important element of the mix. Research suggests that early childhood education has a significant influence on outcomes throughout the rest of life, including subsequent education, social costs, and future role in the labor force. Local childcare advocates are well aware of this, and have made a significant effort to respond. In spring 2006, fewer than 15% of all local full-day child care facilities met any quality standards beyond minimal licensing regulations. As of January 2008, nearly 30% of programs meet quality standards measured and monitored by the Texas Rising Star or NAEYC Accreditation systems. This significant increase is largely due to the work of the Quality Child Care Mentoring Collaborative – a collaborative initiated by United Way Success By 6 and facilitated by WorkSource, with partners Austin Community College and FamilyConnections. This initiative supports childcare programs as they work through a tiered rating system of one- to four-stars, with the ultimate goal of NAEYC Accreditation which represents the highest standard of quality. This obviously has numerous economic implications, though ascribing them to a given community or point in time is challenging.

Taken together, it is clear that formal childcare is an important element of our current and future economy, and should be considered a key asset in Austin’s economic development portfolio. In that light, policy initiatives designed to increase the level of and access to affordable, high-quality childcare (perhaps using tools such as increased funding, inclusion of childcare facilities in local public sector facilities planning, and private-sector tax and regulatory incentives) will likely pay significant dividends.