

Child Care in New Hampshire

An Economic Impact Report



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Child Care in New Hampshire

An Economic Impact Report



State of New Hampshire
John H. Lynch, *Governor*

New Hampshire Employment Security
Richard S. Brothers, *Commissioner*

Economic and Labor Market Information Bureau
Richard Ricker, *Director*

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Executive Summary

Regional planning agencies monitor how well the roadways sustain the volume of traffic using them and explore the possibilities of public transportation to alleviate the roadway strain. Some studies have focused on affordable housing as a way to attract skilled labor to reside in a specific area. Likewise, affordable and quality care for children is an essential part of a striving labor market as it allows parents of young children to work.

Parents' ability to work is the reason child care is an essential part of New Hampshire's economy. In New Hampshire, we estimated that 43,000 parents are able to be in the workforce because child care is available. How would the economy look without these workers? Some studies in the past looked at the accessibility and affordability of child care in New Hampshire but none of these studies have looked at the statewide economic impact of parents' ability to work due to the availability of child care.

In the following child care study we have compiled various data in order to highlight the importance of availability of child care in New Hampshire. We are looking at how the availability of child care impacts the labor force. Quality child care is pivotal in the equation of balancing work and family responsibilities.

Highlights of the child care industry

- Employment in the *Child day care services* industry grew rapidly during the 1990s, reaching 4,900 in 2001, an increase of 88.5 percent from 1990. Since 2001, the *Child day care services* industry remained at the same level. Based on 2007 average annual covered employment, the data show that New Hampshire has a higher concentration of *Child day care services* than any other state in New England.
- Occupations related to the child care industry are mainly *Child care workers, Preschool teachers, and Education administrators, preschools and child care centers/programs*. These three occupations are projected to grow at a very favorable rate.
- According to the New Hampshire Bureau of Child Care Licensing, as of September 2008, there were 1,141 child care providers licensed in New Hampshire. Based on the maximum capacity of these licensed child care providers, it can be estimated that there were 47,171 full time and part time day child care spaces available in the state.
- Over the last decade, maximum capacity in licensed provider facilities has increased 19 percent, despite an overall decline in the number of children. However, the number of children under five years of age has remained above 75,000.

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The presence of a strong child care industry in the state allows parents, mothers of young children in particular, to join the labor force. Overall, the labor force participation rate for New Hampshire females with children under 18 years was 75.8 percent – 4.2 percentage points higher than the U.S. females with children under 18 years. That could be related to New Hampshire women’s higher educational attainment and the fact that the average size of the families in New Hampshire are smaller than that of the nation.

The Economic Impact of Child Care

The Regional Economic Model, Inc. (REMI) was used to estimate the value of the child care industry in New Hampshire.

The outcomes of the model simulation show the following:

- The child care industry accounts for 75,300 jobs in the Granite State. This figure includes:
 - 10,700 jobs in direct and secondary employment specific to the child care industry.
 - 64,600 “ripple effect” jobs – those held by people who can only work because of the existence of child care and the secondary impacts of those jobs.

- New Hampshire’s child care industry will allow working parents to generate \$4.4 billion of state Gross Domestic Product (GDP) in fixed 2000 dollars.
- The child care industry will contribute approximately \$2.5 billion to Personal Income in New Hampshire each year.
- The economic impacts of the child care industry, which includes early childhood education, are similar to the economic impacts of travel and tourism. For example:
 - The child care industry accounts for 7.1 percent of state GDP. Direct spending from travel and tourism in New Hampshire accounts for 7.6 percent of state GDP.*

In addition to the immediate economic impact that the child care industry provides, quality child care can be a positive factor in supporting children in their future educational success and attainment, employment, and lifetime earnings. The future impact of these children’s success is hard to measure but there is strong evidence that quality child care contributes to the future quality of life for all.

* Goss, L.E. *New Hampshire Fiscal Year 2006 Tourism Satellite Account Prepared for the New Hampshire Division of Travel and Tourism Development*. Plymouth State University, Institute for New Hampshire Studies. June 2007.

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Introduction

On July 18, 2007, the Governor signed House Bill 306 into law, establishing a Task Force on Work and Family. The purpose of the task force was to identify the social, cultural, and financial obstacles preventing New Hampshire's workers from achieving a balance between the commitments of work and the responsibilities of taking care of their families.

Many of today's families require two incomes in order to maintain economic security. Affordable and reliable child care is therefore necessary for parents of young children to remain in the labor force and earn wages. If they can't continue working, studies have shown that staying home, for even as little as two years, can result in limited career advancement and decreased earning capacity upon returning to work.¹

The accessibility and affordability of child care in New Hampshire has been evaluated in several ways over the last ten years. In 1998, the Governor's Business Commission on Child Care and Early Childhood Education linked child care and early childhood education to New Hampshire's quality of life. The findings of this commission prompted Provident Bank to fund a study of the demand, accessibility, and quality of child care from the perspective of both families and employers. This endeavor consisted of secondary research, focus groups, and a telephone survey created to gather information including the percent of income spent on child care, levels of after-school supervision, parental satisfaction with providers, and barriers such as affordability and transportation.²



Later studies extended the analysis to the linkages between child care, the labor market, and the economy. In 1999, an article published by the Economic and Labor Market Information Bureau (ELMI) of New Hampshire Employment Security organized data in terms of working women, children, and providers.³ The following year, ELMI published *Child Care 2000*, an analysis inspired in part by an earlier benefits survey of New Hampshire employers. This report examined the inclusion of child care assistance in employee benefit plans, and determined that many of New Hampshire's employers understood the importance of child care and family responsibilities to individual employees. Only a small number of those employers, however, had established formal child care incentives for their employees.

These early studies were missing an economic quantification of the value of society's

1 Jacobsen, Joyce P. and Levin, Laurence M. "Effects of intermittent labor force attachment on women's earnings." *Monthly Labor Review*. Sept. 1995. Pg. 14.

2 Wallner, Mary Jane, Helms & Company, RKM Research. *Child Care in New Hampshire*. Fall 1998.

3 Marney-Hay, Rosanne. "Child Care in New Hampshire." *Economic Conditions in New Hampshire*. Economic and Labor Market Information Bureau, New Hampshire Employment Security. September 1999.

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investment in child care. In June 2005, the Central New Hampshire Regional Planning Commission published a report describing the economic impacts of the child care industry in the central New Hampshire region containing the City of Concord and the nineteen towns located in the Merrimack and Contoocook River Valleys. This report determined that the child care industry in this region contributed \$6.2 million in wages and 416 jobs annually in licensed child care facilities to the local economy, allowed more than 2,500 parents to earn more than \$156 million annually, and contributed \$6.8 million to the state's gross regional product.⁴

For this study, ELMI has adapted the idea of quantifying the economic impact of child care, and expanded the analysis to include the entire state. In so doing, the agency hopes to help employers and policy makers better understand what the child care industry in New Hampshire looks like and how the industry impacts the state's economy. Essentially, child care is the social infrastructure supporting workers and their employers and it secures the well-being of the state's future workforce.



⁴ *Child Care Keeps NH Working: The Economic Impact of Child Care in the Central New Hampshire Region*. The Central New Hampshire Regional Planning Commission. June 2005.

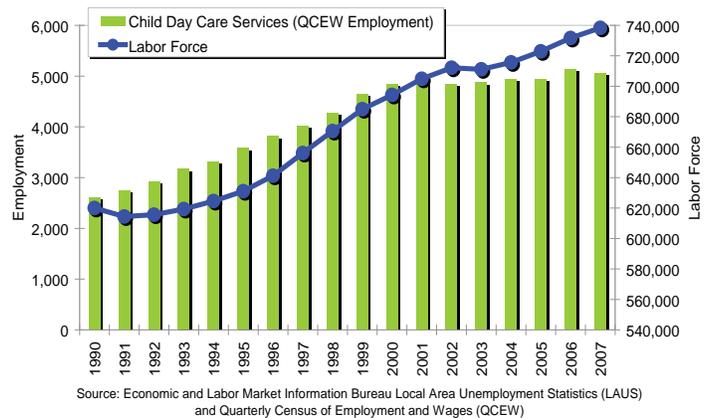
The Child Care Industry in New Hampshire

According to the North American Industry Classification System (NAICS), establishments in the *Child day care services* industry are “primarily engaged in providing day care for infants or children.”⁵ Even though this definition generally refers to preschool children, it may also include care for older children when they are not in school. Examples of employers in this industry include babysitting services in a provider’s own home, nursery schools, child day care centers, preschool centers, before/after school care and Head Start programs – the latter two both separate from schools.

From 1990 to 2001, covered employment⁶ in the *Child day care services* industry group in New Hampshire increased 88.5 percent (from 2,600 to 4,900 jobs). In comparison, employment in the other service-providing industries increased only 32 percent. Since 2001, however, employment in the *Child day care services* industry seems to have leveled off despite continued growth in the statewide labor force. In 2007, there were 5,056 employed in *Child day care services* in New Hampshire.

The location quotient for *Child day care services* in New Hampshire in comparison to the nation is 1.36.⁷ A location quotient (LQ) higher than 1.0 suggests a higher concentration of child day care services in New Hampshire in comparison to the average for the nation. Among the New England states, New Hampshire has the highest LQ when comparing the same industry (*Child day care services*) to the same base (nation).

During the 1990s Child day care services employment increased in relation to the increase in New Hampshire’s labor force



It is important to note that not all child care employment is found in the *Child day care services* industry. Some child care providers are categorized differently in the statewide employment count⁸ because providing care for children is not the primary output of the employer. Examples include employers such as hospitals who provide on-site child care for their employees, fitness and recreational sports centers, which offer child care through after-school programs and camps in the summer, and some private schools which provide preschool services. Finally, many home-based care providers are not included in covered employment industry data because they are self-employed.

Higher education also has substantial child care employment, because many schools have established child care centers as learning

5 North American Industry Classification System (NAICS) Manual, 2007. US Census Bureau. Accessed November 18, 2008. <www.census.gov/cgi-bin/sssd/naics/naicsrch?chart=2007>.

6 Covered Employment is defined as those employees whose employers are covered by unemployment insurance law.

7 Location Quotients (LQs) are ratios that compare an area’s distribution of employment by industry to a reference or base area’s distribution. The reference area is usually the U.S., but it can also be a state or a metropolitan area. The reference or base industry is usually the All industry total. LQs allow areas to be easily compared to each other. This LQ calculation is based on 2007 average annual employment.

8 Quarterly Census of Employment and Wages (QCEW). Economic and Labor Market Information Bureau, New Hampshire Employment Security.

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Employment estimates from New Hampshire Occupational Employment and Wages May 2007 survey

SOC code	Occupational Title	Elementary and Secondary Schools (Including Government)	Colleges, Universities, and Professional Schools (including government)	General Medical and Surgical Hospitals	Other Residential Care Facilities	Child Day Care Services	Other Amusement and Recreation Industries	Total**
		NAICS 6111	NAICS 6113	NAICS 6221	NAICS 6239	NAICS 6244	NAICS 7139	
11-9031	Education Administrators, Preschool and Child Care Center/Program	50	-	-	-	260	-	330
25-2011	Preschool Teachers, Except Special Education	440	90	70	-	2,460	-	3,090
39-9011	Child Care Workers	380	30	80	60	1,250	240	2,290
25-9041	Teacher Assistants	9,250*	80*	-	-	540	-	540
	Early Childhood Education Workers	870	120	150	60	4,510	240	6,250

* These counts should not be considered Early Childhood Education workers

** The occupational employment of the selected NAICS industry groups does not add to the Total all industries count as these occupations are present in additional industries.

laboratories for their Early Childhood Education (ECE) programs. In addition, these child care centers offer ECE research and training resources to other child care agencies in the state. Institutions within the state system, such as the community colleges, Plymouth State University, Keene State College and the University of New Hampshire, provide the state with 338 daycare spaces. Likewise, the Early Childhood Center at Rivier College (privately operated) has a capacity of 130 children.

Occupational employment by industry at the four-digit NAICS level portrays how industries outside of *Child day care services* employ workers in occupations related to providing child care services. For this analysis, the following occupations are considered primarily related to child care: *Child care workers*, *Preschool teachers*, *Education administrators for preschool and child care center/programs* and *Teacher assistants* (partly). The majority of *Teacher assistants*, however, are employed by elementary schools and are not considered part of the child care industry. About three-quarters (72.2 percent) of the state's Early

Childhood Education workers are employed in the *Child day care services* industry (NAICS 6244). Of the remaining employment, half are employed in *Elementary and secondary schools* (NAICS 6111).

As child care employment is "hidden" in other industries as well as having many self-employed providers, it may be difficult to conclude that New Hampshire has a higher concentration of child care services than other states as indicated by the location quotient. Another factor impacting the concentration of child day care services is the need for care, driven by the number of families with both parents in the labor force or single parent households with the one parent in the labor force.

Occupational Projections and Wages

Occupational projections of employment suggest a positive outlook for those who wish to work in the child care industry. Long-term employment projections show that the ranks of *Preschool teachers* are expected to grow 30.4 percent by 2016, with over 145 openings each year.⁹ *Child care workers* are also expected to increase in

⁹ Based on both growth and replacement.

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number, adding an average of 225 jobs each year and 1,073 jobs by 2016.

These child care occupations do not enjoy particularly high wages. *Child care workers*, in particular, face entry-level wages of just over \$7.50 an hour. This is less than many other service-industry occupations, including *Home health aides* (entry-level wage of \$9.76 per hour), *Bank tellers* (\$10.12 per hour) *Fitness trainers* (\$9.02 per hour), and *Retail salespersons* (\$7.94 per hour). The entry level wages for *Child care workers*, however, compare favorably with occupations such as *Building cleaning workers* (\$6.66 per hour) and *Food preparation workers* (\$7.20 per hour).



At the entry level, training for a career in the child care field tends to be vocational and hands-on, with relatively minor academic requirements. For instance, *Child care workers* usually require a high school diploma and vocational or job-related training. But as the employee climbs the ladder of experience and responsibilities, more education may be a prerequisite. *Teacher assistants* and *Preschool teachers* usually require

additional vocational training or an associate's degree. *Preschool administrators* usually require a four-year bachelor's degree and related work experience. As there is an educational progression from *Child care worker* to *Preschool teacher* and *Preschool administrator*, so is there a wage increase.

Long-Term Projections for Child Care Occupations, 2006 - 2016

SOC Code	Occupation Title	2006 Estimated Employment*	2016 Projected Employment	Change	Percent	Descriptor**	Education or Training
11-9031	Education Administrators, Preschool and Child Care Center/Program	296	375	79	26.7%	Very Favorable	Bachelor's degree or higher, plus work experience
25-2011	Preschool Teachers, Except Special Education	3,094	4,035	941	30.4%	Very Favorable	Postsecondary vocational training
25-9041	Teacher Assistants	10,007	11,802	1,795	17.9%	Very Favorable	Short-term on-the-job training
39-9011	Child Care Workers	4,119	5,192	1,073	26.1%	Very Favorable	Short-term on-the-job training

* The base used to project occupational employment includes an estimate of the self-employed. The 2006 estimate of Child care workers in this table is therefore higher than the estimate from the New Hampshire Employment and Wages 2007 Survey.

** Occupations have been assigned a *descriptor* that summarizes the projected growth and openings through 2016. An occupation can be described as *Very Favorable*, *Favorable*, *Less Favorable*, or *Least Favorable*. For more information on occupational descriptors, see the May 2008 edition of *Economic Conditions in New Hampshire*, on the web at <www.nh.gov/nhes/elmi/pdf/zip/econanalysis/econcond/ec_0508.pdf>

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Occupational Employment and Wages - May 2007

SOC Code	Occupation	Entry wage	Mean wage	Median wage	Experienced wage
11-9031	Education Administrators, Preschool and Child Care Center/Program	\$14.27	\$19.63	\$18.92	\$22.32
25-2011	Preschool Teachers, Except Special Education	10.28	13.00	12.5	14.35
25-9041	Teacher Assistants	8.96	11.97	12.04	13.49
39-9011	Child Care Workers	7.51	9.54	9.33	10.55

Source: New Hampshire Occupational Employment & Wages-2008, New Hampshire Employment Security, Economic and Labor Market Information Bureau

The importance of on-the-job training in the child care industry suggests the presence of a “career ladder”, meaning that as a worker develops skill and experience over time, there is a good chance that their wages may increase as well. Requirements of continuing education in many licensed facilities might encourage some to go back to school part time and acquire more credentials which leads to better positions, such as lead teachers.



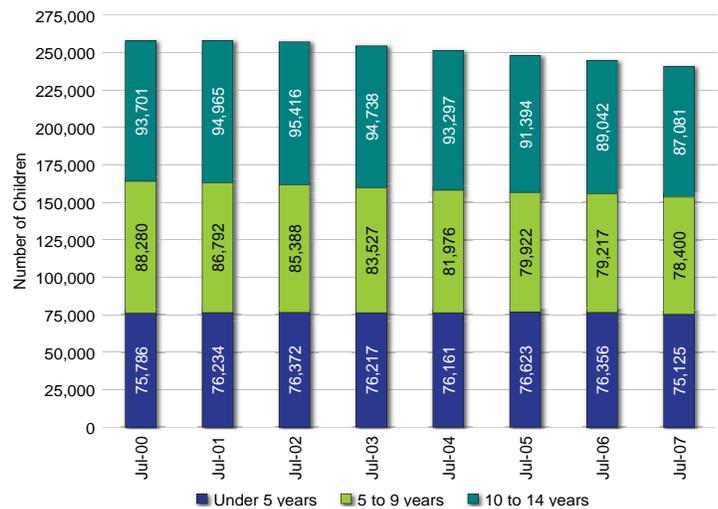
Child Care Licensing and Capacity in New Hampshire

Even though the number of children aged 0-15 years in New Hampshire grew from 236,931 in 1990 to 257,477 in 2000, the number of children under five years of age decreased by about 12 percent. Since 2000 the number of children under 15 years of age has declined to 240,606, yet the number of young children has remained relatively stable. As young children require the most labor intensive care, the overall decline in the population of children since 2000 would not necessarily indicate a decline in the need for child care services, especially when considering that the total labor force in the state during the same time period increased.

The capacity of child care spaces in licensed facilities in New Hampshire can be used as an indicator of the supply for child care services. During the last two decades, there has not been a significant increase in the number of facilities that are licensed by the State of New Hampshire. As of September 2008, there were 1,141 licensed child care providers offering care in both institutional settings and private homes. In comparison there were 1,106 licensed child care centers in 1990 and 1,221 in 1999.¹⁰

In New Hampshire, child care centers and home care facilities are licensed by the Bureau of Child Care Licensing (BCCL) within the New Hampshire Department of Health and Human Services. To obtain a license and/or accreditation, a variety of requirements must be met, including facility standards, worker qualifications, and provider/child ratio.

Despite the overall decline in the number of children since 2001, the number of children under five has remained above 75,000



Source: Source: Population Division, U.S. Census Bureau

The BCCL organizes child care providers into eight different categories. These categories reflect variances in setting, age group, and length of care (part time or full time). The categories are as follows:

- ⚙ Preschool Program
- ⚙ Child Care Nursery
- ⚙ Group Child Care Center
- ⚙ School Age Program
- ⚙ Family Child Care Home
- ⚙ Independent Living Home
- ⚙ Family Group Child Care Home
- ⚙ Night Care

It is difficult to distinguish between these licensing categories because many child care providers include care for multiple age groups.

¹⁰ Marney-Hay, Table 2.

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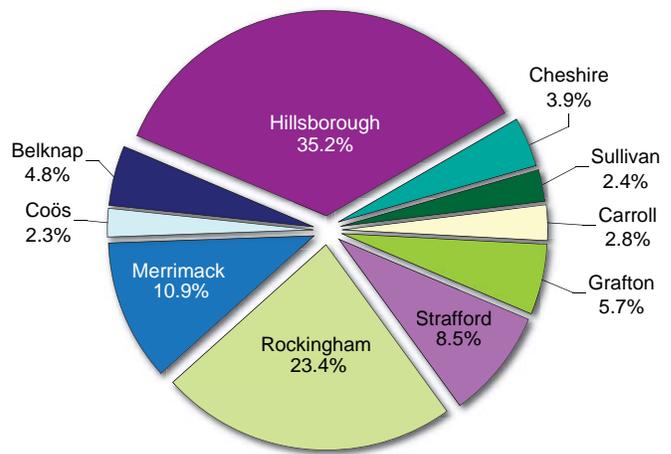
Many providers also offer both preschool (partial day - up to five hours per day) and child care (full-day) services. Many providers do not distinguish between child care and child development and education. As a result, most providers fall into multiple categories, causing the final measurement of child care capacity to contain 18 different categorical combinations.

Based on maximum capacity, 47,171 child care spaces were available in New Hampshire in September 2008. A substantial portion of this capacity (17,488 slots or 37.1 percent) is provided by larger centers who provide services for infants to school age children (See Appendix I). Despite the number of licensed facilities staying at approximately the same level over the last two decades, the licensed child care capacity grew substantially. In 1990, there were 29,914 slots and that number increased to 39,655 slots by 1999.¹¹ Combined with the fact that the number of children under 15 of age has dropped to a level that is close to the 1990 count, it might be concluded that a higher percentage of New Hampshire's children today are enrolled in a licensed child care facility.

Additional data from the New Hampshire Department of Education show that as of October 1, 2007, there were an additional 2,614 children enrolled in pre-school programs through the state's public school system. These children are not included in the above capacity figures.

Full-day kindergarten programs provide additional capacity that is difficult to quantify. Because many public school kindergarten programs are only half-day, leaving the children of working parents with a gap in care, some private schools and child day care centers offer full-day kindergarten programs. (Children

Capacity of Licensed Child Care Facilities by County



Source: Bureau of Child Care Licensing, New Hampshire Department of Health and Human Services

enrolled in full-day kindergarten programs at a day care center would be included in BCCL's total capacity count.)

Licensed Child Care Facilities by County

Hillsborough County boasts 35.2 percent of New Hampshire's child care capacity, the highest among the Granite State's ten counties. Rockingham was next with 23.4 percent of the total capacity, followed by Merrimack County at 10.9 percent. Capacity for the remaining seven counties range from Coös County at 2.3 percent to Strafford at 8.5 percent. These figures are almost identical to each county's percentage of children under 15 years of age. Hillsborough County holds 33.4 percent of the state's children under 15 years, Rockingham, 23.6 percent, and Merrimack, 10.9 percent.

When considering a ratio of child care capacity relative to both the labor force and the number of children, Cheshire, Sullivan, and Carroll

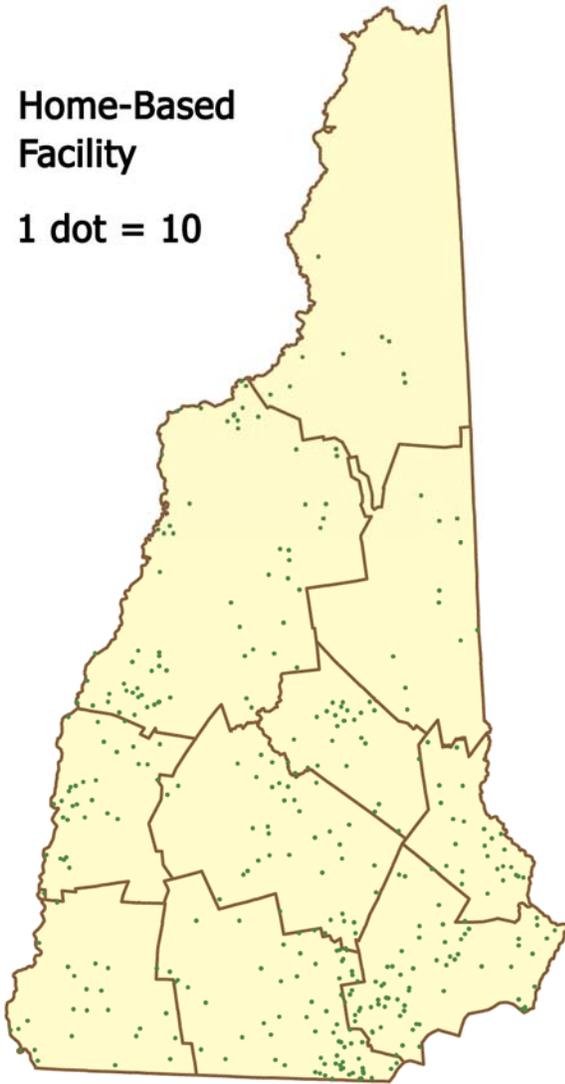
¹¹ Marney-Hay.

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Location of Licensed Child Care Facilities in New Hampshire

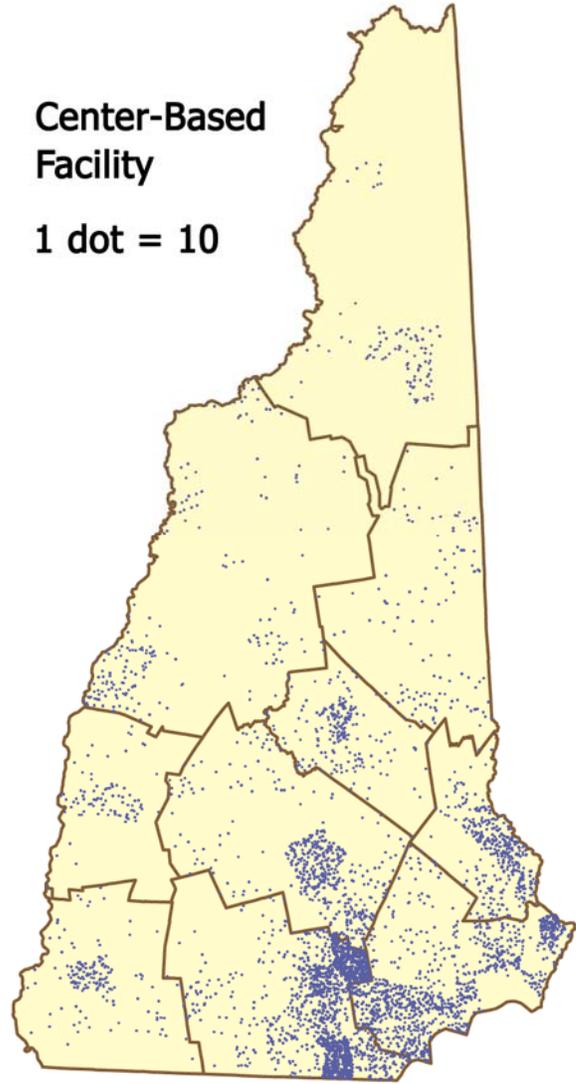
Home-Based Facility

1 dot = 10



Center-Based Facility

1 dot = 10



Data source: Bureau of Child Care Licensing, New Hampshire Department of Health and Human Services

counties reflect the lowest number of available slots. The reason could be a lower labor force participation rate, creating a reduced need for child care services. An aging population in those counties is not a factor, as the average age of all residents in Cheshire County is lower than that of Rockingham County, and the average age of all females in Cheshire County is lower than that of Hillsborough, Rockingham, and Merrimack counties. Another factor could be that more

children in these three counties are cared for by either providers that are not licensed or through some other informal arrangement, such as a relative.

Mapping the locations of the providers by type indicates that licensed center-based child care facilities are concentrated in the urban areas of the state. Licensed home-based providers, though more evenly spread out through the state, are

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still very sparse in many locations. This means that parents in rural areas are likely to have to drive further in order to get the children to their care provider, in addition to their normal commute time. The distance to a care facility is an additional consideration parents in rural areas have to assess when deciding whether or not to stay in the labor force. The other pieces of the child care equation are cost and the quality of care.



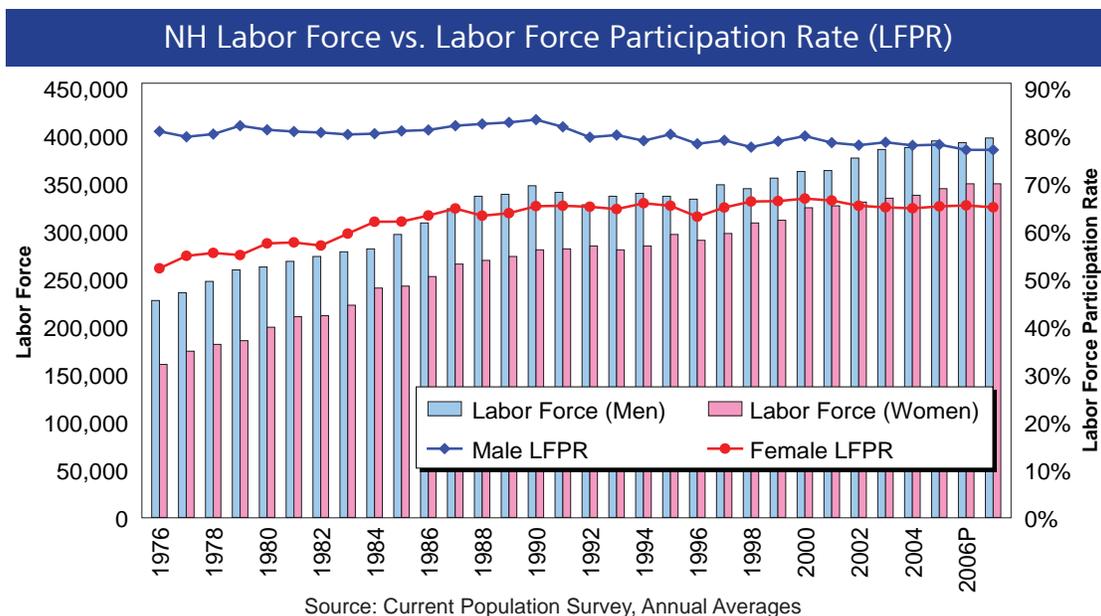
Women in New Hampshire's Labor Force

Despite an overall decline in the labor force participation rate (LFPR) during the 1990s (from 74.0 percent in 1990 to 70.8 percent in 2007), the total labor force in New Hampshire increased substantially, matching the state's rapid population growth. From 1990 to 2007, the total labor force in New Hampshire grew from approximately 620,000 to about 740,000. This growth is attributable in part to the increasing number of women who have joined the workforce. In 1976, the state's LFPR among women was 52.1 percent. In comparison, the state's LFPR for women was 64.9 percent in 2007. This figure is more than 5 percentage points higher than the female LFPR for the nation.

Additional data from the 2007 American Community Survey (ACS) reveals a potential pool of mothers who could, with adequate child care, join the labor force. In 2007, there were 148,163 females age 20 to 64 in New Hampshire

with (their own) children under 18. Three-quarters of these women were in the labor force. This leaves approximately 35,800 women with children under 18 who are not currently in the New Hampshire labor force.

The 2007 ACS figures also reveals that the Granite State can boast higher percentages of mothers in the workforce than the rest of the nation. Specifically, New Hampshire's LFPR among females with children under 18 years is 4.2 percent higher than the LFPR for the U.S. females with children under 18. Digging deeper, the LFPR is higher for two specific groups of mothers – those whose children are under 6 years of age and those whose children are aged 6 to 17. Women whose children span both of these categories, however, have a LFPR two percentage points lower than the nation's. In addition, their LFPR is ten percentage points lower than any other category (See table page 12).



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These figures could be a result of smaller family sizes. The average family size in New Hampshire is smaller than the average for the nation (3.02 versus 3.20 people).¹² Fewer children per family might make it easier for both parents to stay in the labor force. Second, the educational attainment of New Hampshire's women is higher than the nation. Since more education equals better pay, New Hampshire's heightened educational attainment among women could encourage continued participation in the labor

force, even after childbirth. According to the 2007 *American Community Survey*, the percentage of women in New Hampshire aged 25 to 34 with a bachelor's degree or higher is 40.1 percent, compared to a national figure of 32.7 percent. The share of women aged 35 to 44 holding a bachelor's degree or higher is 35.4 percent, compared to 31.8 percent of women nationwide. For those aged 45 to 64, the percentage of women with a bachelor's degree or higher is 32.6 percent, five percentage points higher than the nation.¹³

Presence of own children, under 18 years, by employment status for females aged 20 to 64, 2007			
	2007 NH Estimate	NH labor force participation rate	US labor force participation rate
Total: (Females 20 to 64 years)	402,525		
With own children under 18 years	148,163		
In labor force	112,346	75.8 percent	71.6 percent
Under 6 years only	33,392		
In labor force	23,722	71.0 percent	66.9 percent
Under 6 years and 6 to 17 years	25,702		
In labor force	15,611	60.7 percent	62.7 percent
6 to 17 years only	89,069		
In labor force	73,013	82.0 percent	76.8 percent
Under 6 years*	59,094		
In labor force	39,333	66.6 percent	64.9 percent

* Including the females that have children under 6 years only and the females that have both children under 6 years and children 6 to 17 years

Source: U.S. Census Bureau, 2007 American Community Survey

¹² 2007 *American Community Survey*. U.S. Census Bureau. Accessed November 10, 2008. < www.census.gov/acs/www/>.

¹³ 2007 *American Community Survey*.

Measuring the Economic Impact of the Child Day Care Industry in New Hampshire

A counterfactual approach was used to measure the economic impact of New Hampshire's child care industry. In a counterfactual study, economic impacts are determined by removing an industry from a previously established baseline. The differences between this new forecast and the original baseline represent the industry's economic impact. For this study, ELMI used the New Hampshire 10-county, 169 industry econometric model developed by Regional Economic Models, Inc. (REMI). This particular model allows users to remove employment from a 2006 baseline projection of specific industries.

The counterfactual analysis was conducted in two phases. First, we considered the impact of businesses that provide child care in New Hampshire. Second, we measured the impact of the parents being able to work due to child care availability.

Phase One – The Direct Impact of the Child Care Sector

In this phase, all jobs in the *Child day care services* industry were removed from the model's baseline projection. Specifically, 100 percent were removed from the *Child day care services* industry for the period 2009 to 2025.

The baseline employment in the REMI Model stated 9,075 jobs in *Child day care services* in 2007. This count differs substantially from the annual average employment count of 5,056 for 2007 from Quarterly Census of Employment and Wages (QCEW). The difference is attributable to self-employment. The REMI Model employment numbers are derived from Bureau of Economic Analysis (BEA) estimates, which capture sole

proprietor employment information using Internal Revenue Service data.

By taking out the entire *Child day care services* industry from the REMI Model employment baseline, we are able to capture the impact of the majority of the licensed care facilities and the private home based providers (licensed or not) that file with the Internal Revenue Service.

We recognize that child care services are provided in a number of other settings classified as *Child day care services* by NAICS definition (Preschool services offered by Elementary schools



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- public or private, religious institution, etc.). With the limitation of different data sets, we were not able to estimate the portion of employment solely related to child care services in these external, but relevant, industries.

The results of the simulation show that the child care sector in New Hampshire will be responsible for 10,676 jobs in 2009. This figure contains 9,529 jobs removed from the *Child day care services* baseline projection, and the remaining 1,146 jobs created by the presence of the child care industry. These jobs will be generated from either the indirect or the induced impacts.

Indirect impacts reflect the jobs that depend upon goods and services purchased by the *Child day care services* industry. Similarly, the induced impacts reflect the jobs that depend upon consumer spending by the employees of the *Child day care services* industry. By removing *Child day care services* from the model, the industries that will experience the biggest losses are *Construction*, *Retail trade*, and *Food services and drinking places*. These industries represent areas of the economy where those employed spend the bulk of their disposable income. In addition, the *Construction* industry will react to a fallen demand for the need of non-residential buildings.

In 2009, the child care industry is projected to contribute \$212.3 million fixed 2000 dollars to the Gross Domestic Product for New Hampshire and \$97.1 million fixed 2000 dollars in Real Disposable Personal Income.

Phase Two – The Ripple Effects of Child Care

The second phase of analysis captured the “ripple effect” of child care in New Hampshire. The ripple effect is the economic impact generated by the large

number of New Hampshire parents who are able to work because of the existence of child care. Based on 2007 figures from the U.S. Census Bureau’s *American Community Survey*, it was estimated that 57,073 of New Hampshire’s preschool children needed care because either one parent (in single-parent households) or both parents (in two-parent households) were working. Since this is a count of children, and a family may have more than one child under six enrolled in child day care, we adjusted this number by applying a ratio of average number of children under six for mothers in the labor force. We estimated that the child care industry enabled approximately 43,000 parents with children under the age of six to work.

It should be noted that by using data for children under age six, the simulation did not consider the impacts of after-school child care programs on the labor force. Though these programs are often necessary to allow parents of young school-age children to work full time, there is no reliable way to estimate the total number of workers who rely on after-school programs.

Children In Families And Subfamilies By Living Arrangements And By Employment Status	Number of Children
Under 6 years:	87,284
Living with two parents:	66,719
Both parents in labor force	40,345
Father only in labor force	24,725
Mother only in labor force	1,109
Neither parent in labor force	540
Living with one parent:	20,565
In labor force	16,728
Not in labor force	3,837
Children under 6 in need of day care	57,073

Source: U.S. Census Bureau, 2007 American Community Survey. Table C23008

Child Care in New Hampshire

To complete the counterfactual simulation, these 43,000 workers were removed as a share of 2007 baseline employment for all industries and government. The share of employment removed from each industry was calculated using the percentages of women employed by detailed industry from the Current Population Survey.

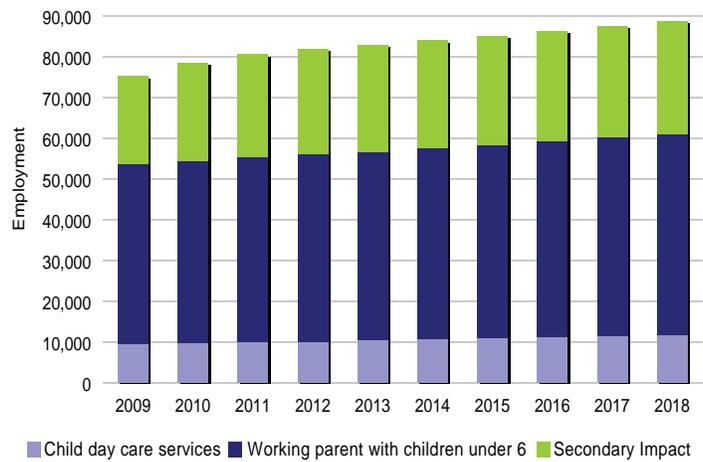
As REMI is a dynamic model reflecting a projected growth in the New Hampshire economy and as we are removing industry employment as a share of the baseline employment, we assume that parents depending on child care availability will grow in proportion to the projected growth of the labor market. The 43,000 jobs depending on the presence of child care in 2007 is projected to grow to 44,260 jobs in 2009. These jobs generate an additional 20,334 jobs, aggregating the impact of parents' ability to work to 64,594 jobs.

Total Impact of Child Care

In total, the child care industry in New Hampshire will account for 75,270 jobs in 2009, with the industry itself generating 10,676 jobs (Phase One) and the availability of child care generating the "ripple effect" of an additional 64,594 jobs (Phase Two minus Phase One). The total impact of child care accounts for 8.5 percent of total projected employment for New Hampshire in 2009.

Beyond employment, in 2009 the child care industry will allow working parents to generate nearly \$4.4 billion of Gross Domestic Product (GDP) in fixed 2000 dollars. This represents more than seven percent of the Granite State's total GDP. The total impact of the child care industry will contribute \$2.5 billion to Personal Income in nominal dollars.

The Impact of Child Care Availability on Employment



The industry sector most affected will be *Health care and social assistance*. This group contains the largest portion of jobs directly related to the provision of child care, including more than 9,500 jobs in the *Child day care services* industry. The next three industry sectors, in order by the jobs impacted, are *Retail trade*, *Accommodation and food services* and *Professional and technical services*. The impacts to these sectors reflect both the distribution of employed parents and the impacts generated from secondary effects (induced and indirect impacts).

Administrative and waste services and *Construction* are also impacted a fair amount by the presence of child care. What is different with these two sectors is that the impact on secondary jobs is larger than the direct jobs held by employed parents. The *Construction* industry mainly responds to the need for non-residential building space used for the purpose of providing child care. The impact of child care on government employment is primarily due to the parents' ability to work, and most of the remaining impacts are generated due to the increased government services as child care enables families to live and work in the state.

Child Care in New Hampshire

The occupation most impacted by the child care industry (by 5,447 jobs in 2009) is *Retail sales workers*. At first this might seem surprising, but in light of the fact that *Retail sales workers* is the single largest occupation in New Hampshire, it might just reflect its overall size. *Primary,*

secondary, and special education teachers (4,841 jobs) and *Other personal care and service workers* (4,193 jobs) rank second and third. These two occupational groups include *Preschool teachers, Kindergarten teachers, Teacher assistants, and Child care workers*. In relative terms, the impact that

Jobs by Industry Impacted by the Availability of Child Care									
By Industry	2009			2013			2018		
	Total jobs	Direct jobs	Secondary jobs	Total jobs	Direct jobs	Secondary jobs	Total jobs	Direct jobs	Secondary jobs
Health care and social assistance (Including Child day care services)	18,367	17,021	1,346	20,534	18,707	1,827	23,569	21,091	2,478
Retail Trade	10,407	6,837	3,570	10,906	6,922	3,984	11,071	6,940	4,131
Accommodation and food services	6,060	3,702	2,358	6,372	3,893	2,480	6,744	4,113	2,631
Professional and technical services	4,775	2,893	1,882	5,217	3,144	2,072	5,729	3,447	2,282
Administrative and waste services	4,274	1,917	2,357	4,663	2,144	2,520	5,153	2,405	2,748
Construction	3,976	690	3,286	6,476	721	5,755	5,722	755	4,967
Other services (excluding government)	3,459	2,132	1,327	3,693	2,152	1,541	4,019	2,261	1,758
Manufacturing	3,373	2,750	623	2,759	2,503	256	2,635	2,516	120
Finance and insurance	3,264	2,472	793	2,883	2,524	359	2,734	2,580	154
Real estate and rental and leasing	2,790	2,051	739	2,450	2,152	298	2,169	2,289	-120
Educational services	2,579	2,362	217	2,657	2,597	60	2,956	2,939	17
Wholesale trade	1,779	1,059	719	1,848	1,098	750	1,878	1,109	769
Arts, entertainment and recreation	1,556	1,076	480	1,567	1,155	412	1,623	1,232	391
Information	1,199	811	387	1,249	863	386	1,301	906	395
Transportation and warehousing	747	533	213	747	548	199	770	570	200
Management of companies and enterprises	606	365	242	581	377	204	572	379	192
Utilities	158	76	82	170	74	96	184	77	107
Forestry, fishing, related activities, and other	121	74	47	98	73	25	88	75	13
Mining	18	16	1	16	14	1	16	15	1
Total Private	69,507	48,837	20,670	74,885	51,661	23,224	78,931	55,698	23,233
State government	1,487	1,245	242	2,175	1,294	881	2,713	1,366	1,346
Local government	3,495	2,926	569	5,113	3,043	2,070	6,377	3,212	3,165
Federal civilian	434	434	0	438	438	0	426	426	0
Federal military	211	211	0	219	219	0	215	215	0
Total Government	5,627	4,816	811	7,945	4,994	2,951	9,730	5,219	4,511
Farm	136	136	0	132	132	0	123	123	0
Total Impact on Total Employment	75,270	53,789	21,481	82,961	56,786	26,175	88,785	61,041	27,744

child care has on *Retail sales workers* only accounts for 8.2 percent of its baseline employment for 2009. In comparison, the impact of child care on *Primary, secondary, and special education teachers* and *Other personal care and service workers* is in between 20 and 25 percent of their respective baseline employment.

Looking forward, the connections between the availability of child care and total employment are projected to grow. By 2018, the model predicts that the jobs available to workers because of access to child care will increase to 88,785.

Child Care in Context

The counterfactual economic impact model suggests that child care holds an important place in New Hampshire's economy. To place these impacts in context, it is useful to compare the child care industry to other areas of the economy. Tourism often gets the attention from policy makers as an area that brings visitor spending and hence jobs to the state's economy. In other words, tourism is viewed as an engine that stimulates the state's economy.

In their 2007 report to the New Hampshire Division of Travel and Tourism Development, the Institute for New Hampshire Studies reported that tourism spending in New Hampshire increased 5.8 percent from 2004 to 2006.¹⁴ Despite a slight decrease in visitor trips (0.5 percent from 2004), the Institute's estimates revealed that travelers and tourists to New Hampshire spent over \$4 billion in 2006, including \$925 million in restaurants and bars, \$901 million in retail stores, and \$704 million on recreation activities.¹⁵ According to the Institute, travel and tourism accounts for 7.6 percent of statewide GDP,

supports over 79,000 jobs, and provides earnings in excess of \$2.1 billion.

The contribution of tourism to the state's economy is close to the estimated economic impact of the child care industry. In addition, the economic impact study of child care does not capture the full extent of child care's contribution to the well-being of the state. In the following, we expand the analysis to include the impact that the child care industry has on the children – New Hampshire's future workforce and show how it is connected to New Hampshire's economic development and planning policies for the future.

The value of Early Childhood Education

For New Hampshire's 75,000 children under five years, quality child care is the start of a journey that leads to future economic success. For many children, their early education begins in a child care setting. Early childhood education has been linked to improved educational achievements. Those with higher educational achievements in turn have been statistically shown to have higher average earnings and lower unemployment rates. Statistics also show a relationship between the educational attainment required for an occupation and projected employment prospects for that occupation through 2016.

There have been multiple studies on the relationships between early childhood education and external benefits to society. The Public Policy Forum examined these numerous studies and created a matrix of the cognitive, behavioral, social, and educational outcomes of early childhood education, and the benefit-cost ratio of early childhood education programs.¹⁶

¹⁴ Goss, L.E. *New Hampshire Fiscal Year 2006 Tourism Satellite Account Prepared for the New Hampshire Division of Travel and Tourism Development*. Plymouth State University, Institute for New Hampshire Studies. June 2007.

¹⁵ Goss, L.E.

¹⁶ Drilias, Elizabeth. *Early Childhood Education Outcomes*. Public Policy Forum, Milwaukee, WI. Accessed October 14, 2008. <www.publicpolicyforum.org/Matrix.htm>.

Child Care in New Hampshire

Some of the significant outcomes of early childhood education programs include:

- Positive effects on cognitive development and IQ
- Reduction in crime and juvenile delinquency among participants in high-quality early childhood education
- Improved social skills and school readiness
- Reduced enrollment in special education
- Improved achievement test scores, and a reduction in grade retention.

In the long-term, the external benefits to society include lower use of welfare, reduced crime costs, higher wages, and as a result, increased tax revenue, higher labor force participation rates, and higher lifetime earnings.



Conclusion

There is little doubt that the availability of child care has a substantial impact on New Hampshire's economy. This study examines the economic impact of the child care industry, along with wide-reaching secondary impacts.

Our study projects that the child day care services industry will be responsible for an estimated 10,700 jobs in 2009, including both direct employment and secondary employment created by the goods and services purchased by the child care industry and by those employed in that sector. The largest secondary impacts are on *Construction, Retail trade, and Food services and drinking places*.

The dollar amount of this market activity can also be measured. The *Child day care services* industry is projected to directly contribute \$212.3 million fixed 2000 dollars to the Gross Domestic Product for New Hampshire. The industry will contribute \$97.1 million fixed 2000 dollars in Real Disposable Personal Income.

In addition to the economic contribution of the child care industry, there is a ripple effect of employment created by the very existence of child care. We estimated that approximately 43,000 parents with children under six years of age are able to work because of available child care.

All together, the child care industry and the availability of child care will account for 75,270 New Hampshire jobs in 2009. This represents 8.5 percent of total projected employment for the state. By 2018, over 88,700 jobs will be associated with the child care industry and its availability. Nearly \$4.4 billion of fixed 2000 dollars of the Gross Domestic Product for New Hampshire – over seven percent of total GDP for the state – will be generated in 2009. The child care industry will contribute over an estimated \$2.5 billion to Personal Income (in nominal dollars).

Quality child care is a positive factor to children with respect to educational success and attainment, employment, and lifetime earnings. Parents are given the opportunity to choose to continue their career and give their children a good life start, and not compromise one or the other. Employers benefit from increased employee retention, reduced absenteeism, and a more highly educated workforce. It is obvious that quality child care contributes not only to the state's economic well-being but also to the future quality of life for all.

Appendix I: Licensed Child Care Facilities by Category

Child Care Agencies by Units and Capacity, Fall 2008	Units		Capacity	
	Number	Percent	Number	Percent
Family Child Care Home	191	16.7%	1,555	3.3%
Family Group Child Care Home	142	12.4%	2,026	4.3%
Family Group Child Care Home / Night Care	2	0.2%	25	0.1%
Independent Living Home	1	0.1%	8	0.0%
Home-based Facility Total	336	29.4%	3,614	7.7%
Group Child Care Center	4	0.4%	133	0.3%
Child Care Nursery	3	0.3%	29	0.1%
Group Child Care Center / Child Care Nursery	32	2.8%	1,349	2.9%
School Age Program	183	16.0%	10,457	22.2%
Group Child Care Center / School Age Program	9	0.8%	702	1.5%
Group Child Care Center / Child Care Nursery / School Age Program	24	2.1%	1,696	3.6%
Preschool Program	95	8.3%	2,244	4.8%
Preschool Program / Group Child Care Center	92	8.1%	3,298	7.0%
Preschool Program / Group Child Care Center / School Age Program	33	2.9%	1,419	3.0%
Preschool Program / School Age Program	2	0.2%	40	0.1%
Preschool Program / Child Care Nursery	20	1.8%	613	1.3%
Preschool Program / Child Care Nursery / Group Child Care Center / School Age Program	224	19.6%	17,488	37.1%
Preschool Program / Child Care Nursery / Group Child Care Center	80	7.0%	3,897	8.3%
Group Child Care Center / Child Care Nursery / School Age Program / Night Care	4	0.4%	192	0.4%
Center-based Facility Total	805	70.6%	43,557	92.3%
Child Care Total	1,141	100.0%	47,171	100.0%

Appendix II: The REMI Model

REMI Policy Insight® is a structural model, meaning that it clearly includes cause-and-effect relationships. The Model is based on two key underlying assumptions from mainstream economic theory: households maximize utility and producers maximize profits. Since these assumptions make sense to most people, lay people as well as trained economists can understand the Model.

In the Model, businesses produce goods to sell locally to other firms, consumers, investors, and governments, and to purchasers outside the region. The output is produced using labor, capital, fuel, and intermediate inputs. The demand, per unit of output, for labor, capital, and fuel depends on their relative costs, since an increase in the price of any one of these inputs leads to substitution away from that input to other inputs. The supply of labor in the Model depends on the number of people in the population and the proportion of those people who participate in the labor force. Economic migration affects the population size. People will move into an area if the real after-tax wage rates or the likelihood of being employed increases in a region.

Supply and demand for labor determine the wage rates in the Model. These wage rates, along with other prices and productivity, determine the cost of doing business for each industry in the Model. An increase in the cost of doing business causes either an increase in prices or a cut in profits, depending on the market for the product. In either case, an increase in costs would decrease the share of the local and U.S. market supplied by local firms. This market share, combined with the demand described above, determines the amount of local output. Of course, the Model

has many other feedback variables. For example, changes in wages and employment impact income and consumption, while economic expansion changes investment, and population growth impacts government spending.

Figure 1 is a pictorial representation of REMI Policy Insight®. The Output block shows a business that sells to all the sectors of final demand as well as to other industries. The Labor and Capital Demand block shows how labor and capital requirements depend both on output and their relative costs. Population and Labor Supply contribute to demand and to wage determination. Economic migrants in turn respond to wages



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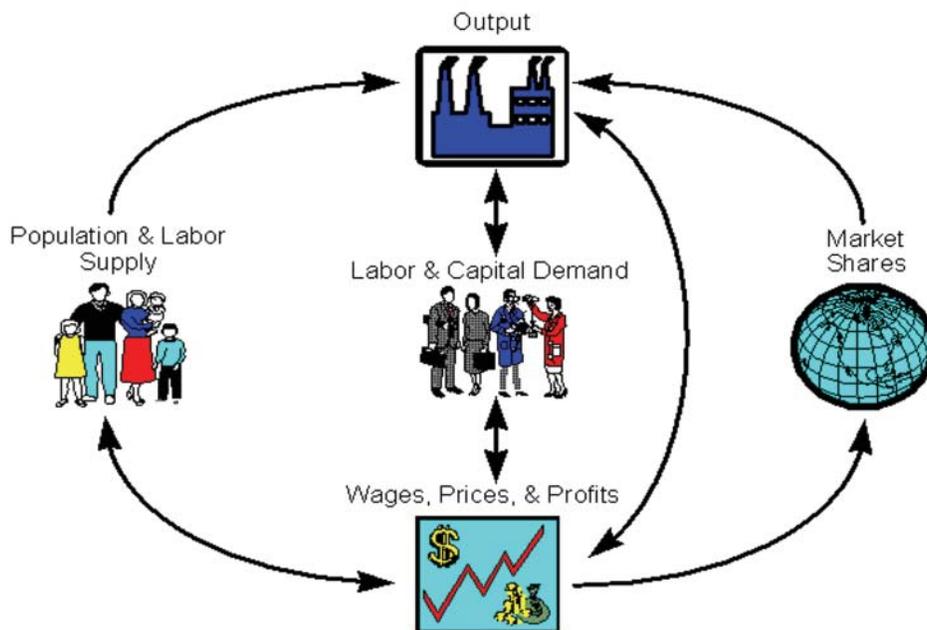
and other labor market conditions. Supply and demand interact in the Wage, Prices, and Profits block. Prices and profits determine market shares. Output depends on market shares and the components of demand.

The REMI model brings together all of the above elements to determine the value of each of the variables in the Model for each year in the baseline forecast. The Model includes all the interindustry interactions that are included in input-output models in the Output block, but goes well beyond an input-output model by including the linkages among all of the other blocks shown in Figure 1.

In order to broaden the Model in this way, it was necessary to estimate key relationships. This was accomplished by using extensive data sets covering all areas in the country. These large data sets and two decades of research effort have enabled REMI to simultaneously maintain a theoretically sound model structure and build a model based on all the relevant data available.

The Model has strong dynamic properties, which means that it forecasts not only what will happen but also when it will happen. This results in long-term predictions that have general equilibrium properties. This means that the long-term properties of general equilibrium models are preserved while maintaining accurate year-by-year predictions and estimating key equations using primary data sources.

Figure 1 REMI Policy Insight Overview



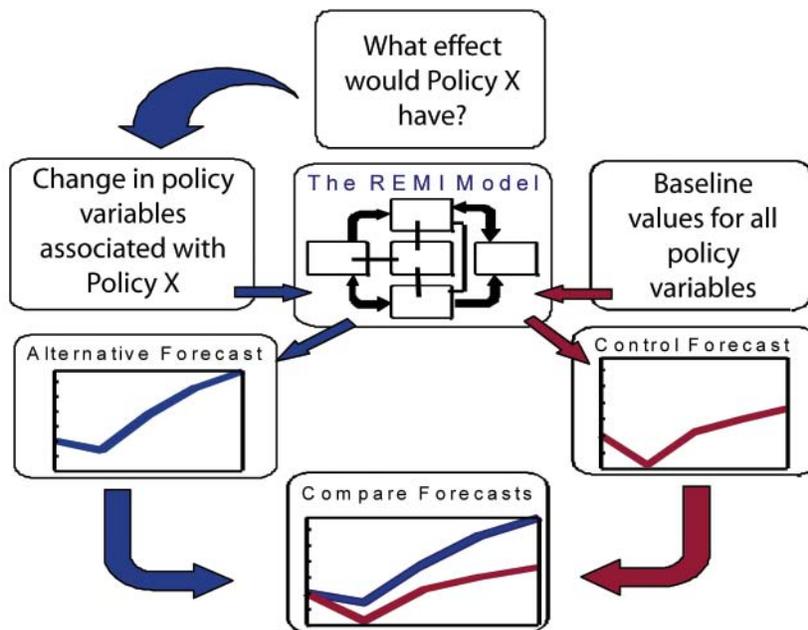
Child Care in New Hampshire

Figure 2 shows the policy simulation process for a scenario called Policy X. The effects of a scenario are determined by comparing the baseline REMI forecast with an alternative forecast that incorporates the assumptions for the scenario. The baseline REMI forecast uses recent data and thousands of equations to generate projected economic activity for a particular region. The policy variables in the Model are set equal to their baseline value (typically zero for additive variables and one for multiplicative variables) when solving for the baseline forecast.

To show the effects of a given scenario, these policy variables are given values that represent the direct effects of the scenario. The alternative forecast is generated using these policy variable inputs.

For this study, Policy X is the removal of the child day care services industry. Then we created an additional policy variable (representing another Policy X) which is the removal of 43,000 jobs representing parents able to work due to the availability of child care.

Figure 2 Policy X Scenario





The products and services of the NHES Economic and Labor Market Information Bureau result from the cooperation and teamwork of the entire ELMIB Bureau staff:
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