

masstaxpayers.org

THE UNTOLD COST OF INADEQUATE CHILD CARE

APRIL 2022

PREPARED BY



MASSACHUSETTS
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CONTENTS

3	BACKGROUND
4	EXECUTIVE SUMMARY
5	INTRODUCTION
6	WHY THIS MATTERS FOR MASSACHUSETTS
8	A POTENTIAL SOLUTION
9	CHILD CARE CHALLENGES
11	NATIONAL & STATE ECONOMIC IMPACT STUDIES
16	ECONOMIC IMPACT OF INSUFFICIENT CHILD CARE IN MASSACHUSETTS
19	ASSESSING THE MA ESTIMATE
19	ASSESSING COVID-19 IMPACTS ON EMPLOYER COSTS
23	CONCLUSION



BACKGROUND

MTF focuses on public policy issues that have a major bearing on the Commonwealth's long-term economic well-being. In recent years, this work has encompassed wide-ranging topics such as the value of effective transportation networks, the cost of the opioid epidemic, and the economic consequences of racial inequities.

This report marks the first in a series of research dedicated to examining early education through this economic lens. It is apparent that access to child

care is critical to both families and their employers. In the months ahead, MTF will be assessing the child care system in Massachusetts to emphasize opportunities for improvement. Before embarking on that research, this report considers how the current shortfalls in our system impact our families, businesses, and overall economy.



**Massachusetts
Taxpayers Foundation**

EXECUTIVE SUMMARY

Over the past few years the issue of child care has gained momentum in national and state policy discussions.¹ This has been especially true throughout the pandemic, as the public health emergency and economic fallout turned a dire child care situation into a crisis. Due to the increased focus on this issue, there has been growing interest in analyzing how insufficient child care impacts the economy. Inadequate child care access is particularly relevant in Massachusetts, where demographic trends and workforce constraints may exacerbate the economic impact of child care gaps. Over the past several months, MTF conducted a landscape analysis of recent research which used survey data to estimate the dollar figure associated with insufficient child care. Although these previous assessments are not perfect, they enable us to take various components of each to approximate the economic costs to families, employers, and taxpayers in Massachusetts.

It is likely that these figures represent a conservative estimate. As an example of why that is true, our analysis for individual costs excludes the impacts of

parents no longer in the workforce due to challenges with accurately measuring them. This approach is consistent with other research, but likely undercounts the true extent to which child care hinders economic growth. Nevertheless, this report clearly demonstrates that thoughtful investment in our state's child care system could unlock billions of dollars in economic activity from which individuals and businesses would benefit.

In fact, improving our child care system is currently at the forefront of policy discussions in the state. The Early Education and Care Economic Review Commission recently released its report identifying immediate, short-term and long-term improvements to the system. Organizations like Strategies for Children and the Massachusetts Business Coalition for Early Childhood Education are actively engaged in these efforts as well. To augment this work, MTF's focus over the coming months will transition to analyzing our system's shortfalls and the potential possibilities for policy change at the state, federal, and private levels.

MTF ESTIMATES that due to inadequate child care, **MASSACHUSETTS LOSES ROUGHLY \$2.7 BILLION EACH YEAR** in lost earnings for employees, additional costs and lower productivity for employers, and fewer tax revenues for the state. Further broken down, every year:

- **EMPLOYERS LOSE \$812 MILLION**
due to lower productivity and turnover/replacement costs.
- **INDIVIDUALS AND FAMILIES LOSE \$1.7 BILLION**
in wages from missing work or reducing their hours.
- **MASSACHUSETTS FOREGOES \$188 MILLION**
in tax revenues due to lower earnings and lost wages.



INTRODUCTION

Child care is a foundational component of our economy. It enables parents to work and businesses to thrive, creating financial security and economic opportunity for families and children. However, the U.S. child care system has long struggled with accessibility and affordability, leaving many families without the support they need to join or remain in the workforce. According to research conducted by the Bipartisan Policy Institute, there are roughly 8.4 million children age five and under with the potential need for child care in the U.S., but only 5.9 million slots, a 32% gap.^{2, 3} This lack of child care negatively impacts parents, businesses, and the economy by:

1. reducing the labor force participation of parents with young children,
2. disrupting workplace productivity and increasing hiring costs for businesses, and
3. limiting tax revenue collections due to lower earnings.⁴

The pandemic has worsened these impacts. The closure of child care programs throughout the pandemic has corresponded with parents leaving the workforce at high rates. This is especially true for mothers. A year and a half after the pandemic began, nearly 1.6 million women with children under 17 had dropped out of the workforce and not yet rejoined it.⁵ When parents leave or are held back from joining the workforce due to child care issues, it results in lost earnings and decreased spending power in the economy. At the same time, businesses struggle to retain a fully-engaged workforce, constraining their productivity and increasing their turnover costs. These two factors have a widespread impact on the economy by reducing economic activity and lowering tax revenues. In addition to these immediate economic consequences, a number of academic studies have indicated that insufficient child care also adversely affects longer-term outcomes for children, such as educational and career advancement.⁶

Given the important relationship between child care and the workforce, and the growing attention the industry has received throughout the pandemic, many studies have been dedicated to measuring how gaps in child care impact the economy, and the parents and businesses within it. Recent national and state studies have each found that our economy loses out on millions, if not billions, of dollars each year due to insufficient child care. As state policy

makers and stakeholders begin to consider reforms to the child care system, the goal of this MTF report is to quantify the economic cost of inadequate child care in Massachusetts and outline why this issue is so important to the state's future fiscal health.

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8.4 MILLION CHILDREN
age five and under with the potential need for child care in the U.S., but only 5.9 million slots, a 32% gap.

Using survey data from nine state studies conducted by the U.S. Chamber of Commerce, MTF finds that insufficient child care costs the Massachusetts economy roughly \$2.7 billion in earnings, higher business expenses, lost productivity, and foregone tax revenue each year. In addition to explaining these results, this report also provides an analysis of the workforce shortages in Massachusetts and how child care can be a potential solution. An overview of several previous research reports estimating economic impact is also provided due to their influence on how we approached our analysis. Lastly, to frame our findings and better understand the influence of the pandemic on costs to businesses, we calculate two other estimates based on results from ReadyNation and the U.S. Census Bureau's Household Pulse Survey.

WHY THIS MATTERS FOR MASSACHUSETTS

Massachusetts has a workforce problem. The number of people of prime working age (20-54) has been declining since 2014. This is due, in part, to the Commonwealth's aging population. Over the last decade, the state has seen increased growth in the population of those 65 years old and over. While this population grew at a rate of roughly 4% from 2000 to 2009, in the subsequent decade, it grew by 29% - from 906,000 in 2010 to roughly 1,170,000 in 2019.⁷ Population projections expect this trend to further increase in the years to come. At the same time, birth rates in Massachusetts have been declining since 2000 and are roughly 13% lower than the national average.⁸ Together, these trends indicate a shrinking workforce for years to come and highlight why getting parents the support they need to participate in the labor force is crucial for the state's economy.

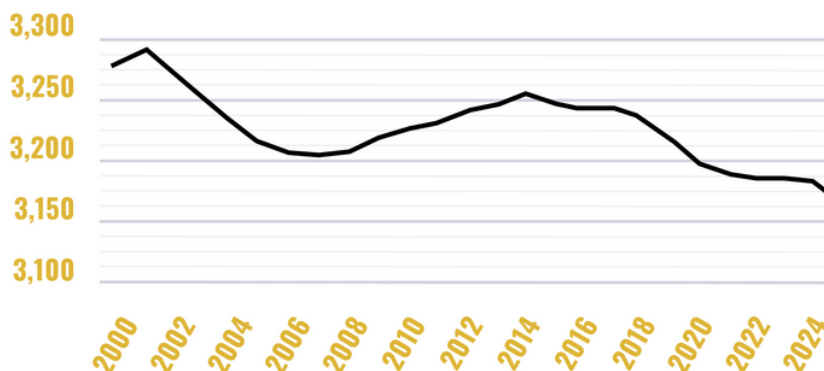
Historically, our job market has attracted high skill workers from overseas, which has helped to offset demographic trends and sustain our workforce. However, recent migration patterns have given rise to significant job market challenges. Net international migration has seen steep declines since 2017. Restrictions on employer-sponsored visas puts limitations on the number of skilled workers we can attract to the state. In 2019, only 28,000 employment-based visas were granted in the U.S. In 2020, that number shrunk to under 15,000 in large part due to the pandemic.⁹ Domestic migration hasn't helped either. Since 2010, net domestic migration has remained below zero, indicating that people are leaving Massachusetts for other states. These issues pose great challenges for the future of Massachusetts' economy by potentially leaving us with a depleted workforce not able to fill the jobs vacated by the increasing number of retirees in the state. If we don't have a workforce to fill available jobs, how can Massachusetts maintain its current level of economic activity or grow the economy?



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MA Population, Age 20-54



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THE PANDEMIC HAS GIVEN US A PREVIEW OF WHAT COULD HAPPEN WITH SUSTAINED WORKFORCE SHORTAGES

When economic activity shrunk to near zero in 2020, businesses closed and thousands of workers became unemployed. As the economy recovers and demand surges, employers across the country are struggling to attract workers to available jobs. Restaurants have been particularly hard hit. Of the 4.5 million people who quit their jobs in November 2021, just under 1 million were in the accommodation and food services industry.¹⁰ Some restaurants have had to respond to these worker shortages by reducing hours, minimizing offerings or temporarily closing.

Not only is this bad for consumers, but it also has a negative impact on the livelihoods of workers and the generation of economic activity. Although some of these conditions are short-term and unique to the pandemic, they provide a clear example of what might happen if we don't have a robust workforce to fill vacant jobs.



A POTENTIAL SOLUTION

An affordable and accessible child care system can help us overcome our workforce challenges and promote economic growth. As a number of studies demonstrate, sufficient child care promotes participation in the workforce.^{11,12} Parents with reliable and accessible child care throughout the early years of their child's life are able to stay in the workforce without significant career disruptions that can impede their advancement. This results in higher lifetime earnings and retirement savings, as long breaks in employment often mean lower wages upon return, especially for women.¹³ In addition, with accessible child care, parents who left the workforce may choose to re-enter it, giving a boost to their household income while adding spending power to the economy.

In addition to spurring immediate participation in the workforce, child care can also have positive effects on long-term outcomes that benefit our economy. Studies have shown that children who participate in quality early education programs see improved outcomes, on measures such as health, educational attainment, and career opportunities, compared to those who don't. One study of the Boston Public School early education system found that preschool enrollment boosted high school graduation rates and college attendance.²⁰ According to the study findings, preschool enrollment led to a 5.9 percentage point increase in the likelihood that these children would attend a four-year college, leaving them better prepared to join the labor force and earn high wages as adults. An analysis by the

Table 1. Potential Impact of Parents Joining the Workforce¹⁸

# of Parents with Children >5 Not Working in MA ¹⁹	% of Parents Who Could Join the Workforce	Wages Gained	Income Tax Revenue Gained
99,488	10%	\$859 Million	\$32.6 Million
99,488	15%	\$1.3 Billion	\$49 Million
99,488	20%	\$1.7 Billion	\$65 Million

Currently, one in five children under the age of six in Massachusetts live in a two-parent household where only one parent is in the workforce.¹⁴ Almost all of those children live in a household where the father is the only one employed (90%).¹⁵ This finding closely aligns with lagging labor force participation rates for mothers with young children. In December 2020, the national labor force participation rate of female parents was roughly three percentage points lower than that of female non-parents.¹⁶ While some parents make the decision to stay home to care for their children based on personal preference, many may stay home because adequate, affordable child care is impossible to obtain. A national poll in 2018 found that 20% of mothers and 10% of fathers with children under 18 who were not currently working, would look for work if reliable and affordable child care was more accessible.¹⁷ If we take the lower bound estimate and assume that 10% of parents with young children not participating in the Massachusetts workforce were able to join it full-time earning the state median wage, the economy would gain \$859 million in wages and \$33 million in tax revenues (see Table 1).

Brookings Institution found that median career earnings for a bachelor's degree recipient are more than twice as high compared to someone with only a high school diploma or GED. Even those with some college or an associate degree fare better than those who don't, earning 70% and 45% more over their lifetime, respectively.²¹ This increases the readiness and availability of our workforce and promotes labor force participation, bringing with it a myriad of benefits including maximizing our economic output and expanding our tax base for future reinvestment. It also ensures that as our economy grows, so do the people within it.

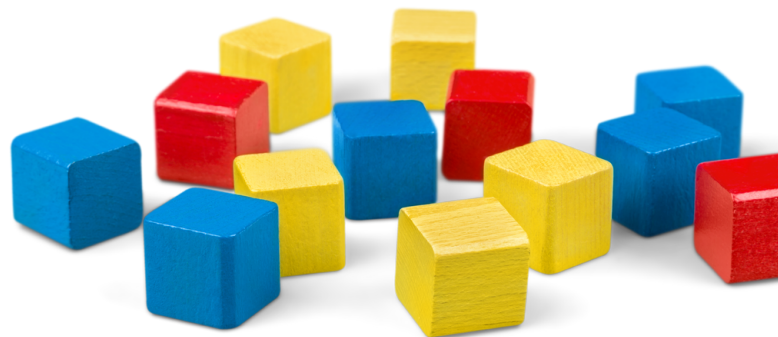


CHILD CARE CHALLENGES

Although child care has the potential to address some of our workforce challenges, the current child care system in Massachusetts is not accessible enough to meet the needs of all parents.

Limited supply, high costs, and workforce challenges all contribute to a child care system unable to support many working parents in the state. Based on 2019 supply estimates, roughly a third of child care age children in Massachusetts (more than 100,000) would not be able to access a seat if they wanted to.²² The pandemic has only worsened these access gaps. Permanent child care closures have dwindled an already short supply of child care seats – as of October 2021, 1,200 child care providers had permanently closed since March of 2020. Although 725 new programs opened during that same time period, the program types and their capacities varied which has impacted the supply. Federal relief funds have helped stabilize the system, but the state still had 6,200 fewer child care seats in the fall of 2021 than it did pre-pandemic.²³

This has implications for families and children across the Commonwealth. Currently, over 10,000 children under five years old are on a waitlist for subsidized care and roughly 58,000 (40%) three- and four-year-olds are currently not enrolled in any form of early education.²⁴ ²⁵A majority of those children are in households with incomes below 200% of the federal poverty line, a population that stands to gain the most benefit from formal child care.²⁶

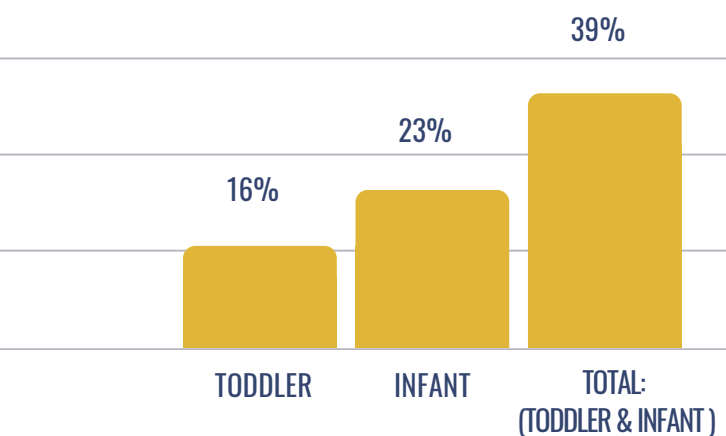


The increasingly unaffordable cost structure of child care further impedes families' abilities to access it. The average cost of infant care is \$21,000 a year in Massachusetts, making it the most expensive state in the nation, only behind Washington, D.C., and well above the national average of \$15,888.^{27, 28}

Infant care in Massachusetts is more expensive than tuition and fees at a four-year public college and 31% more costly than average rent in the state, which is also one of the highest in the nation.²⁹

Child care costs for toddlers are not much lower, averaging to \$15,095 a year.³⁰ Facing these costs, a family which has an infant child and a four-year-old and earns the gross state median income would spend 39% of their income on child care.³¹

COST OF CARE AS A PERCENT OF MA FAMILY MEDIAN INCOME

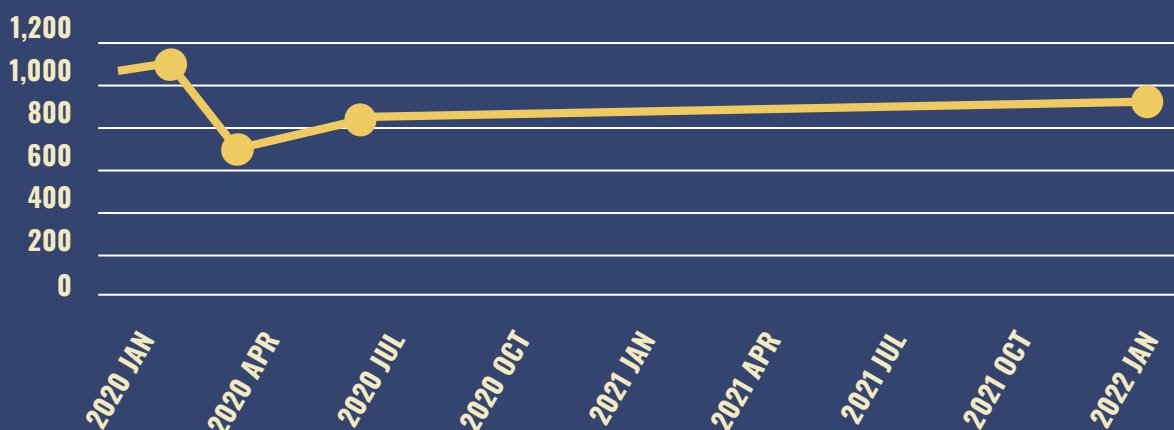


This is more than five times what the U.S. Department of Health and Human Services deems affordable. According to their standards, child care should cost no more than 7% of a family's income. Despite these dynamics, child care providers are not making substantial profits. Low staff-to-child ratios, soaring rents, and limited historical investment from the federal government means many child care providers struggle to stay financially afloat.

The child care industry is known for its low wages and limited benefits. The pandemic and its subsequent tight labor market have turned ongoing child care workforce challenges into a crisis. Nationally, the child care workforce has 131,000 fewer positions than it did before the pandemic.³² Many child care staff, citing health concerns, low wages, and higher-paying jobs elsewhere, have left the industry. Jobs remain open despite some programs offering hiring and retention bonuses, leaving them with the difficult decision to cut back hours or close locations. According to a survey conducted by the Massachusetts Department of Early Education and Care (EEC), 60% of programs indicated that staffing shortages were the primary driver behind their capacity limitations.³³ Worker shortages, paired with state regulations that keep child to staff ratios low in order to maintain high-quality care, further complicate the issue. Without the workforce to fill jobs, a child care system known for its supply constraints has become even more limited.

As the data make clear, the insufficiencies of our child care system come with a cost. In order for MTF to better understand the extent of these impacts in Massachusetts, we reviewed previous research to provide us with a foundation for our own estimate. In the sections below we outline the different approaches taken by various economists and academics.

CHILD CARE WORKERS IN THE U.S. (IN THOUSANDS)



NATIONAL & STATE ECONOMIC IMPACT STUDIES

In 2019 ReadyNation, a coalition of business executives focused on promoting public policies that strengthen the workforce and the economy, calculated the national economic impact of insufficient child care. In both 2019 and 2020, the U.S. Chamber of Commerce conducted similar studies but focused solely on the effect of insufficient child care on employers in nine states.³⁴ Academic researchers have also focused on this issue - the University of Nebraska estimated the costs of child care gaps in their state, taking a slightly different methodological approach. These studies

have been influential in the field and are foundational components of MTF's research. Given their importance, the following sections outline the survey results and processes used for estimating how a lack of child care impacts the economy. Regardless of the methodology or geographic location, all of these studies support the same conclusion: a lack of child care access costs parents, businesses, and the economy billions each year.



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READYNATION REPORT

ReadyNation's report, "The Economic Impacts of Insufficient Child Care on Working Families," which was conducted by an economist at the City University of New York, found that the U.S. loses \$57 billion a year in earnings, productivity, and revenue due to families not having adequate child care. The estimate is based on a nationally representative survey of 812 working parents with children under three years old. Almost half of surveyed parents (47%) reported that their career had been affected by child care issues by reducing their work hours, limiting their productivity, and/or hindering their career advancement. These challenges have an effect not only on individual workers, but on businesses and tax revenues as well and are reflected within their estimates provided below.

IMPACT ON WORKERS

The result of the challenges outlined in the ReadyNation survey is not only reduced income due to missing work, but also less experience and gaps in employment that can diminish parents' future earnings potential. The report estimates that, each year, working parents lose an average of \$3,350 in earnings, reduced productivity at work, and in more time looking for work. Across the 11 million working parents with children under age three, the annual burden is \$37 billion.

IMPACT ON BUSINESSES

ReadyNation also outlines the ways in which productivity and revenue are affected by a lack of child care access. As is mentioned above, child care challenges divert parents' attention away from work, resulting in a less productive workplace. Additionally, parents who leave their jobs or suffer job loss due to child care demands cost businesses in terms of recruiting, hiring, and re-training. Research indicates that the cost of turnover for businesses is roughly 21% of a worker's salary.³⁵ Using this figure, ReadyNation estimates that each year on average businesses lose \$1,150 per working parent with children under three in reduced revenue and additional recruitment costs. In total, the burden is \$13 billion.

IMPACT ON FEDERAL TAXES

The economic impacts outlined above also have a direct relationship to tax revenues. Lower earnings by both individuals and businesses means lost federal income tax. It also has implications on state and local consumption taxes as parents have less disposable income to spend on goods in the economy. ReadyNation estimates that each year governments lose \$630 per working parent in lower tax collections.³⁶ Aggregated across the 11 million working parents in the U.S. with children under three years old, this results in reduced tax revenues of \$7 billion.

READYNATION: KEY FINDINGS

HOW SURVEYED PARENTS WERE IMPACTED

- On average, surveyed parents lost two hours of work time per week
- One-in-six working parents reported turning down a promotion or reassignment to a preferred job
- 13% reported quitting a job

HOW THEY ESTIMATED ECONOMIC IMPACT

- Survey data was applied to their estimate of 11 million working parents in the U.S. with children under three years old
- Excludes parents no longer in the workforce

WHAT THEY FOUND

- \$37 billion in lost earnings for working parents
- \$13 billion in extra costs to businesses
- \$7 billion in reduced tax revenue
- Per capita cost of \$172

U.S. CHAMBER OF COMMERCE REPORT

The economic impacts felt at a national level have also been found in state-level estimates. Using their own survey data from parents with children under six years old, the U.S. Chamber of Commerce published reports in 2019 and 2020 which analyzed the cost of insufficient child care in nine different states. The results do not include costs to individuals and were divided into three categories: the cost of turnover, the cost of absences, and the cost of reduced tax revenue. ^{37, 38, 39}

Much like ReadyNation, the U.S. Chamber used survey results to calculate the impact of insufficient child care on the economy. The highest rates of parents reporting that child care challenges were disrupting their employment occurred in Alaska (40%), Arkansas (34%), and Arizona (34%). Iowa, on the other hand, had the lowest rate of child care-related employment disruptions, but still impacted roughly one-quarter of workers (24%). Based on these results they found that lost economic potential for employers ranged from \$165 million in Alaska to \$9.4 billion in Texas.

IMPACT ON BUSINESSES

The U.S. Chamber's survey findings, in addition to earnings and tax data, were then used to calculate the economic impact to each state. As is highlighted earlier, their impact estimate consisted solely of costs to employers. The extra costs firms incur due to parents missing work because of child care issues was the largest contributor to their assessment, totaling \$8.7 billion across all nine states. Given the exclusion of costs to individuals, it is likely this finding is a result of lost productivity and replacement costs associated with employee absences. The second largest contributor was the cost of turnover, the expenses businesses incur when someone permanently leaves their job. This totaled \$6.9 billion. Tax revenues were the lowest share of the total cost at \$3.6 billion.

U.S. CHAMBER OF COMMERCE: KEY FINDINGS



HOW SURVEYED PARENTS WERE IMPACTED

- 9.2% voluntarily left a job; 4.7% involuntarily left a job
- 8.1% went from full-time to part-time positions
- 63% missed work or class

HOW THEY ESTIMATED ECONOMIC IMPACT

- Survey data was applied to their estimate of parents in each state with children under six years old
- Only included costs to employers

WHAT THEY FOUND (ACROSS ALL 9 STATES)

- Turnover costs employers \$6.9 billion
- Absences costs employers \$8.7 billion
- States lost \$3.6 billion in tax revenue
- Avg. per capita cost of \$261

FIRST FIVE NEBRASKA & THE UNIVERSITY OF NEBRASKA REPORT

In 2020, First Five Nebraska, a local non-profit organization dedicated to advancing early education, partnered with professors in the Department of Economics at the University of Nebraska to publish, *"The Bottom Line: Economic Impacts of Inadequate Child Care Access in Nebraska."* Unlike previous research, the University of Nebraska did not create and implement their own survey to measure the impacts of child care disruptions on working parents. Instead, they averaged the results from similar national and state surveys and then applied the results to population and economic data specific to Nebraska.⁴⁰ Expanding upon the scope of the U.S. Chamber's research, they included impacts on individuals within their estimate as well as the effects on businesses and taxpayers. In addition to elements of their methodology, these two components are integrated into MTF's calculations for Massachusetts and are further detailed later in this report. Overall, they found that Nebraska loses \$745 million in income, business output, and state tax revenues.⁴¹

IMPACT ON INDIVIDUAL INCOMES

The University of Nebraska estimated economic impact by using survey data showing the extent to which parents miss work, reduce their hours, or leave the workforce altogether due to child care. In contrast to previous research, they did not include salaried workers in their calculation for lost wages due to missing work. They assumed salaried workers use vacation and personal paid time off to accommodate their needs, therefore not sacrificing any earnings. However, both salaried and hourly workers were included in calculating foregone income due to reducing their hours or leaving the workforce altogether. In total, gaps in child care availability cost Nebraskan families up to \$489 million a year.

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When parents leave the workforce or earn less than they could, the state in which they live loses income tax revenue.



IMPACT ON BUSINESSES

The same survey data was used to estimate how inadequate child care costs businesses. Their analysis breaks down the costs to businesses into three parts: replacement costs associated with hourly workers missing work, lost productivity associated with salaried workers missing work, and turnover costs associated with both hourly and salaried employees leaving the workforce. They found that child care challenges cost businesses \$234 million a year in extra personnel expenses and lost productivity.

IMPACT ON TAXES

The third way they measured impacts on the economy is through losses in income tax. When parents leave the workforce or earn less than they could, the state in which they live loses income tax revenue. Using average and marginal tax rates for full-time and part-time workers, and their findings for lost wages, they estimated that Nebraska loses over \$21 million in income tax revenue each year.

UNIVERSITY OF NEBRASKA: KEY FINDINGS

HOW SURVEYED PARENTS WERE IMPACTED

- 4% reported child care-related turnover
- 14% reduced their hours from full-time to part-time
- 37% reported child care-related absenteeism
- 11% turned down a promotion

HOW THEY ESTIMATED ECONOMIC IMPACT

- Survey data from existing research was applied to their estimate of parents with children under five in Nebraska
- Excludes parents no longer in the workforce
- Lost wages are solely associated with hourly workers
- Wages of salaried workers were used to calculate lost productivity for employers

WHAT THEY FOUND

- \$489 million in lost income for Nebraskan families
- \$234 million in extra costs to Nebraskan businesses
- \$21 million in foregone tax revenue
- Per capita cost of \$379





ECONOMIC IMPACT OF INSUFFICIENT CHILD CARE IN MASSACHUSETTS

The reports outlined earlier provide a framework for a Massachusetts economic impact assessment. The findings presented in this report do not use a Massachusetts-specific parent survey and instead rely on data from the nine U.S. Chamber surveys outlined above. Although the U.S. Chamber's estimates only measure impacts on employers, their expansive survey results, in addition to methodology from the University of Nebraska, allow us to determine an economic impact that includes both the costs to employers and individuals. Policy makers and advocates in Massachusetts, motivated by the impacts of the pandemic, are currently debating the future of our early education system. Deciding to use the data already available ensures that this report can be relevant in advancing those conversations. The aggregated results from the U.S. Chamber surveys can be applied to our estimate of just over 289,000 working parents with children under five in Massachusetts to come up with an approximate number of parents impacted by child care challenges.⁴²

Based on this method, we estimate that Massachusetts loses \$2.7 billion in economic potential each year due to gaps in our child care system. Employer costs account for roughly one-third or about \$812 million of that total due to turnover, replacement costs, and lost productivity. However, individual parents and families bear the largest burden of insufficient child care. Their losses total \$1.7 billion and comprise lost wages associated with missing work and with having to move from full-time to part-time positions because of child care issues. Massachusetts also loses roughly \$187 million in foregone income and sales tax revenue.

SURVEY RESULTS

The Chamber of Commerce survey data used to estimate the Massachusetts economic impact were collected at different times depending on the state

Table 2. U.S. Chamber of Commerce Survey Responses	
U.S. Chamber 9-State Average	
Involuntarily separated	4.7%
Voluntarily left a job	9.2%
Went from FTE to PTE	8.1%
Missed work/class in last 3 mo.	63.4%
Avg. Days Missed/Year	14.3

being evaluated. Four of the surveys were administered prior to the pandemic and the remaining five were in the field during the pandemic.⁴³ Not surprisingly, the survey data collected before the pandemic produced a more conservative estimate while using data from the pandemic produced a larger estimate. This analysis includes all nine survey results in order to produce an estimate based on a larger, more robust sample. The survey results from across these nine states are averaged and included below (see Table 2). The estimates provided are calculated based on these survey findings.

IMPACT ON INDIVIDUALS

The U.S. Chamber's survey data revealed that 63.4% of parents miss roughly 14 days of work a year, on average, due to child care issues. When applied to Massachusetts, this amounts to \$457 million in lost earnings across roughly 112,000 hourly workers with children under five. This figure does not include lost wages from salaried workers who may be able to use paid time off for missed days of work. In addition to dealing with absenteeism, the survey results revealed

that about 8% of parents had to move from full-time to part-time jobs because of child care issues. In Massachusetts, this equates to over 20,000 working parents with children under five reducing their hours permanently, with \$1.2 billion in estimated annual lost wages.

Table 3. Economic Impact on Individuals⁴⁴

Lost Wages (Missed Work)	\$456.63 Million
Lost Wages (Full-time to Part-time)	\$1.20 Billion
Total	\$1.66 Billion

IMPACT ON EMPLOYERS

Applying the cost of turnover cited in previous research to the wages of the estimated 35,000 parents with children under five who left the workforce, MTF finds that employers lose roughly \$563 million a year due to extra rehiring and

Table 4. Economic Impact on Employers

Cost of Turnover	\$562.66 Million
Replacement Costs for Hourly Workers	\$228.31 Million
Lost Productivity of Salaried Workers	\$20.91 Million
Total	\$811.88 Million

retraining costs.⁴⁵ In addition, employers also bear a cost for short-term absences. When hourly employees miss work, businesses spend extra money to replace those workers, oftentimes at a premium.⁴⁶ We estimate that businesses lose approximately \$228 million a year in overtime costs associated with replacing hourly workers with children under five. Finally, employers bear a cost from lost productivity when salaried workers miss work for child care needs. We estimate that 71,000 salaried parents in Massachusetts with children under five missed work, costing their employers \$21 million a year.⁴⁷ In total, insufficient child care costs employers roughly \$812 million a year.

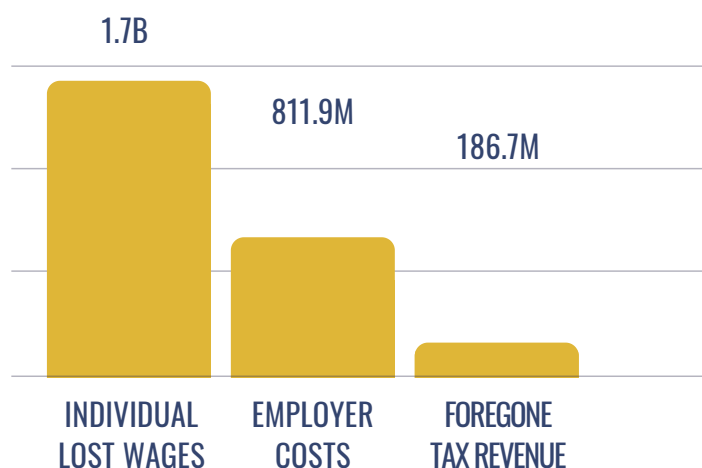
IMPACT ON TAX REVENUES

To estimate lost tax revenue from child care issues, we take effective tax rates from the Institute of Taxation and Economic Policy and apply them to the lost wages of workers.⁴⁸ Massachusetts loses roughly \$141 million in foregone income tax revenue due to declines in earnings and lower labor force participation. An additional \$46 million in sales tax revenue is lost due to less spending in the economy. In total, the state takes in \$187 million less in taxes a year due to child care issues impacting parents in the workforce.

SUMMARY

As our findings show, the economic costs of insufficient child care are high. Massachusetts loses billions in economic potential each year due to parents not being able to participate in the workforce to the fullest extent possible. In total, individual, employer, and tax losses due to child care limitations cost the Massachusetts economy \$2.7 billion each year, equating to a per capita cost of \$378. This aligns well with the University of Nebraska findings but is greater than the state per capita assessments conducted by the U.S. Chamber because it includes both costs to working parents and employers. Incorporating the impact on parents more accurately demonstrates the true cost of our inefficient child care system. Even still, these findings are imprecise and likely conservative as our individual impact estimate does not include the lost wages of parents who recently left or have not been in the workforce.

TOTAL LOST ECONOMIC POTENTIAL IN MA



ASSESSING THE MA ESTIMATE: READYNATION COMPARATOR

ReadyNation’s national economic impact provides an opportunity to assess the estimate of an annual \$2.7 billion cost to Massachusetts. Taking the Massachusetts share of national GDP and applying it to their estimate of \$57 billion results in a Massachusetts cost share of \$1.6 billion for employers and working families. However, unlike MTF’s analysis which estimates the cost for parents with children five and under, ReadyNation’s survey only considered working parents with children under three, representing roughly 40% fewer families. The Massachusetts estimate using ReadyNation data would be roughly \$2.5 billion if it included families with children between three and five years old. In addition, ReadyNation used national wages which are significantly lower than median wages in Massachusetts. Based on these differences, the

results determined here are consistent with MTF’s findings. The reoccurring nature of the survey was meant to catalog these changes with real time estimates, not steady-state interpretations. Instead of choosing a survey week arbitrarily, we averaged all of the responses to produce a “typical” month during the survey time period.

IMPACT ON EMPLOYERS

Much like in MTF’s Massachusetts estimate, the data collected by the Pulse Survey allows us to calculate employer costs related to long-term turnover and short-term absenteeism. According to the Pulse Survey, almost 70,000 Massachusetts workers left or lost their jobs on average in any given month between July and October of 2021.

Table 5. MA Economic Impact Estimates by MA Share of ReadyNation

	Total Lost Economic Potential	Individuals	Businesses	Taxes
U.S. Estimate (ReadyNation)	\$57.0b	\$37b	\$13b	\$7B
MA Estimate (share of GDP)	\$1.58b	\$1.03b	\$360m	\$194M

ASSESSING COVID-19 IMPACTS ON EMPLOYER COSTS

Data from the U.S. Census Bureau’s Household Pulse Survey provides an opportunity to assess how the pandemic may have impacted the cost of child care limitations on employers. The survey was created to collect data on the social and economic impacts of the COVID-19 pandemic on U.S. households. It has gone through multiple phases since its inception in April 2020, but recently included questions specifically related to child care.⁴⁹ Based on Pulse Survey data, in any given month between July and October of 2021, a lack of child care cost businesses in Massachusetts \$97 million.

The pulse survey economic impact figure is provided in a monthly snapshot because the volatility of the survey results and the changing nature of the pandemic make annualized estimates unreliable. Over the last two years the impacts of the pandemic have changed as COVID-19 cases have fluctuated.



IMPACT ON EMPLOYERS

This equates to a one-month turnover cost of roughly \$89 million for employers. Replacement costs for absent hourly workers due to a lack of child care account for an additional \$8 million in extra expenses. Lost productivity from salaried workers adds another \$713 thousand to their monthly total. Overall, employers lost about \$97 million in one month between July and October of 2021 due to inadequate child care.

potential each year in increased employer costs, lost wages, lower productivity, and shrinking tax revenues due to inadequate child care.

There is no question that expanding our state's child care system would have a major impact on our economy, unlocking billions in economic potential and boosting our businesses and families along the way. However, many questions still remain on how

Table 6. Monthly Impact on Employers

Cost of Turnover	\$456.63 Million
Replacement Costs for Hourly Workers	\$7.78 Million
Lost Productivity of Salaried Workers	\$0.71 million
Total	\$97.28 Million

SUMMARY

The employer impact estimate using Pulse data offers us an opportunity to understand how these costs relate to MTF's Massachusetts assessment on businesses. Disaggregating the \$812 million in employer costs using U.S. Chamber data results in a monthly employer impact of \$68 million. Compared to the \$97 million a month found using Pulse data, this means employer costs could have increased by up to 40% during the pandemic. Unfortunately, due to data incongruences, it was not possible to compare the economic impact on individuals and this was therefore not included.

CONCLUSION

Research makes clear that child care in the U.S. is not sufficient to meet the needs of working parents. High costs, limited supply, and low-wages all plague the system. Nowhere is this more true than in Massachusetts which has among the highest child care costs in the nation and a supply gap above the U.S. average. These limitations have a major impact on the state's economy and are further exacerbated due to concerning demographic trends that threaten our state's future workforce. MTF estimates that Massachusetts loses at least \$2.7 billion in economic

state policies can be modified to improve the system on matters of affordability, access, and equity. More research is needed to understand the current shortfalls in our system and the opportunities for thoughtful investment for the benefit of our child care workforce, businesses, and families. In the coming months, MTF will embark on this new stage of research, making sure to consider the roles of the state, federal government, and private businesses in setting a viable path forward.

We hope this research can be useful to policymakers and advocates as improvements to our child care system are being considered. If we are to unleash all of Massachusetts's economic potential, we must enhance our child care infrastructure and increase accessibility in the state. The future of our workforce and economy depend on it.



APPENDIX A: METHODOLOGY

ESTIMATING WORKING PARENTS WITH CHILDREN UNDER FIVE IN MA

Our calculations for estimating economic impact using survey data from the U.S. Chamber of Commerce and the U.S. Census Bureau was divided into two parts. First, we had to estimate the number of working parents in Massachusetts that have children under the age of 5 (see Appendix Table 1). The American Community Survey collects the number of households with at least one child under the age of six. Following similar assumptions used by the University of Nebraska, we presume that children are distributed equally throughout these households and take 5/6ths of this number to estimate the number of households with at least one child

under five. The result, 228,301 was then distributed based on the percentage of married couples, single males, and single females found nationally. Married households were doubled to estimate the number of married parents. To further determine which of these parents were working and their employment type (e.g., full-time vs. part-time), we based our estimates on national data from the Bureau of Labor Statistics. In 2020, 56.2% of married couples with children under 6 were both employed, compared to 64.6% of single females and 79.4% of single males. In addition, 87% of employed persons worked full-time. Of those full-time workers, 55.5% were paid hourly.

Appendix Table 1. Estimate of Working Parents in Massachusetts

	Total	Married	Single Male	Single Female
Households w/ at least one child under 5	228,301	160,331	14,682	53,287
Total Individuals	388,632	320,663	14,682	53,287
Individuals Working	289,144	243,062	11,658	34,423
Individuals Working Part-time and Earning Hourly Wages	37,589	31,598	1,516	4,475
Individuals Working Full-time and Earning Hourly Wages	139,613	117,363	5,629	16,621
Individuals Earning Annual Salaries	111,942	94,102	4,513	13,327



ESTIMATING ECONOMIC IMPACT

The second part of the calculation required applying each source's unique survey data to our estimate of working parents in Massachusetts. To estimate the costs to employers, we calculated lost turnover, replacement costs, and productivity losses. Individual costs included the lost wages of hourly workers and the reduced earnings from parents moving from full-time to part-time positions. Tax losses were derived from the lost wages of those who left the workforce, missed work, or reduced their hours.

EMPLOYER COSTS

- To estimate the cost of turnover, we applied the share of individuals who reported losing or leaving a job to our estimate of working parents with children under five in Massachusetts. We then used state median earnings to calculate lost wages for full-time and part-time hourly workers and salaried workers. The cost of turnover (21%) was applied to those lost wages to get the total cost to employers due to worker turnover.
- To estimate replacement costs we followed a similar pattern. We took the share of individuals who reported missing work due to child care and applied that to our estimate of working parents with children under five in hourly wage jobs. Based on U.S. Chamber data, we assumed they missed roughly 14 days a year due to child care issues. We then calculated their lost wages, differentiating between full-time and part-time workers. We multiplied these lost wages by our replacement figure (50%) to get the costs employers would pay to replace workers at an overtime rate.
- Productivity losses were calculated by taking a percentage of the lost wages of salaried workers who missed work. The percentage was derived from a Kronos survey that estimated the financial impact of employee absences.⁵⁰

INDIVIDUAL COSTS

- To estimate the cost of absences on individuals, we took the share of individuals who reported missing work and applied them to the estimate of working parents in hourly wage jobs. We again assumed they missed roughly 14 days a year due to child care issues. We applied median wages to this population and arrived at the cost of missing work to employees.

- Lost wages due to parents reducing their hours were calculated by taking the full-time wages of that population and subtracting their new part-time wages from it.

TAX LOSSES

Income tax and sales losses were calculated by applying effective tax rates from ITEP (based on the median wages used in our calculation) to the lost wages of hourly full-time and part-time workers and those in salaried positions. This included populations of parents who voluntarily left the workforce, reduced their hours, or missed work (hourly workers only). Parents who were fired from their job were not included due to complexities in measurement, given that many of them are likely to receive unemployment benefits.



APPENDIX B: LIMITATIONS

As is highlighted throughout this paper, estimating economic impact is a challenging and multi-faceted process that comes with its share of limitations. Although the data are not perfect, the estimates are based on reasonable assumptions and largely follow previous research methods. On the following page, we share some of the main concerns and decisions points faced throughout our calculations.

The primary data challenge was that the estimates do not use Massachusetts-specific survey information. ReadyNation had the right data, but it was collected at the national level and was based only on parents with children under three years old. The U.S. Chamber of Commerce had a plethora of state-level data, but none for Massachusetts. Ultimately, our estimate is based on the survey data from the U.S. Chamber because it had the largest sample and the most thorough data to fit the research question.

Calculating the economic impact/lost wages of individuals who left the workforce also proved to be especially challenging. The survey data used throughout this assessment was based on parents self-reporting their experiences with insufficient child care. While it is easy to determine if a parent chose to leave the workforce due to child care (voluntary separation), it is less clear when leaving the workforce is due to a decision not made by the

actual survey respondent (involuntary separation). In addition, calculating the economic potential lost from people who leave the workforce was not as easy as calculating their lost wages. Purely wage-based estimates do not account for other trade-offs that might decrease or increase the economic impact. For instance, although parents would lose wages from leaving the workforce, they might save money by not having to pay for child care. There could also be an economic loss due to that family no longer financially contributing to the child care market. Due to these concerns, our individual costs did not include the lost wages of those no longer in the workforce.

As is noted previously in this paper, we assumed that salaried workers did not lose wages when they missed work. However, we did want to include the productivity losses experienced by employers due to those absences.

Unfortunately, there is no perfect way to measure lost productivity. We chose an approach that was reasonable and aligned with previous research. Based on a survey of employers, our estimate assumes that productivity losses are roughly 6% of payroll expenses. This is slightly more conservative than the 10% used by ReadyNation.



APPENDIX C: U.S. CHAMBER OF COMMERCE SURVEY DATA AND RESULTS

Appendix Table 2. U.S. Chamber Survey Responses by State

	AK	AZ	AR	ID	IA	MS	MO	PA	TX
Sample Size	264	402	393	332	331	332	312	330	416
Did not accept a job	10%	5%	7%	11%	7%	9%	6%	14%	3%
Voluntarily left a job	7%	6%	11%	12%	10%	11%	10%	9%	7%
Declined a promotion or raise	2%	4%	3%	4%	2%	3%	3%	5%	5%
Went from full-time to part-time	11%	9%	8%	6%	5%	4%	12%	8%	10%
Missed Work or Class	74%	69%	75%	48%	49%	55%	63%	62%	76%
<i>Avg. Days Missed/Year</i>	17	14	15	12	12	16	12	16	15

Appendix Table 3. Economic Impacts to Employers by State

	AK	AZ	AR	ID	IA	MS	MO	PA	TX	Total
Turnover	\$40M	\$594M	\$310M	\$248M	\$429M	\$326M	\$534M	\$1.5B	\$2.9B	\$6.9B
Absences	\$111M	\$829M	\$355M	\$166M	\$352M	\$227M	\$537M	\$1.4B	\$4.7B	\$8.7B
Taxes	\$13M	\$348M	\$200M	\$65M	\$153M	\$120M	\$280M	\$591M	\$1.8B	\$3.6B
Total	\$165M	\$1.8B	\$865M	\$479M	\$935M	\$673M	\$1.4B	\$3.5B	\$9.4B	\$19.2
Per Capita	\$225.0	\$247.5	\$287.2	\$260.5	\$293.1	\$227.3	\$219.3	\$266.9	\$322.2	\$261.0

APPENDIX D: PULSE SURVEY DATA

Appendix Table 4. Household Pulse Survey Weeks 34 – 39

Survey Week	Took unpaid leave	Left a job	Lost a job
Sept 29 - Oct 11	25%	16%	6%
Sept 15 - Sept 27	23%	15%	7%
Sept 1 - Sept 13	32%	15%	8%
Aug 18 - Aug 30	27%	18%	9%
Aug 4 - Aug 16	23%	17%	7%
July 21 - Aug 2	23%	20%	8%
National Average	25.4%	16.8%	7.4%

ENDNOTES

1

Unless otherwise specified, throughout this report **child care** represents care for children under five years old and not yet in Kindergarten.

2

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33

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The U.S. Chamber of Commerce released reports highlighting the insufficient cost of child care in Idaho, Iowa, Arizona, Alaska, Arkansas, Texas, Missouri, Mississippi, and Pennsylvania.

35

Boushey, Heather; Glynn, Sarah Jane. There are Significant Business Costs to Replacing Employees. 2012.
<https://www.americanprogress.org/article/there-are-significant-business-costs-to-replacing-employees/>

36

To calculate effective tax rates, ReadyNation assumes these parents are joint filers with one child and have child care expenses of \$3,000.

37

Cost of Turnover = 21% x average wages of workers who left or lost a job due to child care.

38

Cost of Absences = median weekly wage x number of hourly wage earners who missed work x 52 weeks.

39

Reduced Tax Revenue = Institute of Taxation and Economic Policy (ITEP) estimates of effective tax rates.

40

State survey data came from studies in Maryland, Louisiana, and Georgia.

41

Numbers do not include multiplier impacts also calculated by the University of Nebraska. In trying to keep this consistent with other reports, these added costs were excluded from our overview. Multiplied impacts equated to \$150 million in costs to individuals and an additional \$497 million in lost output.

42

For details on our population estimates see Appendix A.

43

Estimates in Idaho, Iowa, Mississippi, and Pennsylvania were based on data collected prior to the pandemic while estimates in Alaska, Arizona, Arkansas, Missouri, Montana, and Texas were from surveys collected during the pandemic.

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