Inadequate Child Care for Working Families

The Burden on the Pennsylvania Economy*

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Summary

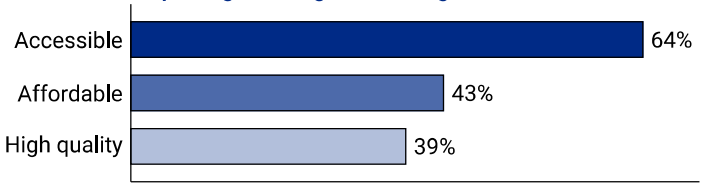
Many Pennsylvania families struggle to find affordable child care. When adequate child care is unavailable, parents cannot work to their full capacity: household income is lower and career prospects are diminished. Also business productivity is lower and so are tax revenues. Inadequate child care therefore imposes a significant drag on the Pennsylvania economy.

This report estimates the full economic cost of this child care deficit across Pennsylvania. Using an economic model based on a new, Commonwealth-wide survey of parents with children under age five, it calculates the financial impact of inadequate child care on working parents, on businesses, and Pennsylvania taxpayers.

Inadequate Child Care

Most families rely on multiple care arrangements – including family care, center-based care and non-family care. Across Pennsylvania, two-thirds of families rely on non-family care. There are opportunities for four-years old to enroll in center-based care, but until that age most parents cannot secure the accessible, affordable, and quality care they need.

Parents reporting challenges in finding child care that is:



Pennsylvania parents report that inadequate child care adversely impacts their work in sizable and persistent ways:

- **Reduced work productivity:** More than one-half report being distracted, late, or missing commitments at work.
- **Losing work:** One-third report that their work hours were cut; one-in-seven report being demoted of fired.
- **Exiting work:** One-third of parents decided to move from full-time to part-time work; and one-fifth quit their jobs entirely.
- **Missing career opportunities:** One-third report forgoing work-related training, promotions, or new job offers.

When reviewing their household budget, **many Pennsylvania parents are "care-burdened"**: two-fifths report that they spend more on child care than rent each month; and another one-third say that child care is as costly as rent.

The Economics Burden of Inadequate Child Care

The economic consequences of inadequate child care for Pennsylvania parents, businesses, and taxpayers are calculated using an economic model of labor supply, business output and the state tax code.

Per working parent with children aged under 5 there are substantial losses each year:

- **Parents lose $5,570** from lower earnings, reduced work productivity, and job search costs.
- **Businesses lose $1,700** in reduced productivity and extra recruitment costs.
- **Taxpayers lose $1,460** in lower federal and state tax contributions.

Per working parent the economic losses over the childhood years (from birth) are very large:

- **Parents lose $38,040** in lost earnings, reduced participation in the labor market, and lower returns to experience.
- **Businesses lose $9,930** per worker in reduced productivity and extra recruitment costs.
- **Taxpayers lose $9,910** per working parent in federal and state tax revenues.

Aggregated across all Pennsylvania working parents the **annual private burden of inadequate child care amounts to $4.9 billion**. In addition, the **aggregate annual business burden is $1.5 billion**. The burden of inadequate child care is therefore an **aggregate annual social burden of $6.4 billion**. For Pennsylvania taxpayers, inadequate child care results in tax revenues that are lower each year by $1.3 billion. Across all affected groups, the **adverse economic activity amounts to $7.7 billion**. These substantial burdens indicate the persistent impacts of inadequate child care.

These **economic burdens have grown since 2022**. The number of parents reporting work disruptions has grown, as has the economic burden per disruption (and the share borne by working parents). Overall, the aggregate parental burden has grown by 20% since 2022; the business burden is unchanged; and the tax burden has grown by 30%. The aggregate adverse economic activity burden has grown from $6.6 billion to $7.7 billion.

Workers in different sectors have different experiences of child care. These translate into different economic burdens. Workers in the mining sector are most likely to have to quit work when child care is inadequate. For Pennsylvania, workers in mining and construction sectors incur the heaviest burden as a proportion of average earnings within the sector. Given its economic scale, the healthcare sector has the largest aggregate burden (at $1.07 billion of the $6.4 burden).

Contents

1 Introduction

Having access to child care is critical for families' economic security.[1] When high-quality, affordable child care is available, parents can find jobs more easily, be more productive, and build stable careers. This promotes family stability and child well-being; it also boosts economic growth.

However, too many parents face serious limits in their child care options. The supply is constrained - there have not been enough center-based child care slots - and the pandemic made the shortage worse. Even when care is available, it is often very expensive — sometimes costing more per hour than parents earn in wages and often costing as much as rent. Struggles with child care are therefore a big part of the "affordability crisis" facing families across the U.S.

This Report calculates the economic consequences when child care is inadequate for Pennsylvania families and for selected groups of workers within the Commonwealth. New survey evidence from Pennsylvania parents with children under age five demonstrates how child care affects parental labor supply; this evidence is then applied in an economic model to calculate the full burden of inadequate child care. The analysis begins by describing key features of the child care system in Pennsylvania, including what care parents use and how they assess their options. Second, the Report illustrates the strong link between inadequate child care and parental work outcomes. These linkages are used to model the economic burden of inadequate child care: how it affects family income, business productivity, and government revenues. This economic burden is calculated at the family level, for Pennsylvania as a whole, and for Pennsylvania taxpayers. In supplementary analysis, the burden is calculated for selected economic sectors separately. The analysis is harmonized to a prior study of inadequate child care in Pennsylvania conducted in 2022.

2 Child Care in Pennsylvania

There are 677,000 children under 5 in Pennsylvania; this equates to 874,000 working parents.[2] Like many families across the US, families in Pennsylvania face a child care system that is deficient in several key ways. Key features of child care across the U.S. are reprised here:[3]

- Most households struggle to find non-parental child care.
  Families often piece together care from several sources—center-based care, relatives, and non-relatives. Even so, more than one-third of families have no access to any child care at all. Among those who do have care, the hours are far below what parents typically need to maintain full-time employment. Access to formal child care is especially scarce for parents with low education, living in single-parent households, or living in poverty.[4]

- Child care is often unaffordable.
  Families below the poverty line spend, on average, more than 25% of their income on care. For families with two young children, child care can consume 40% of average worker earnings. Similar to being rent-burdened, many families are now care-burdened.

- Limited access to child care directly reduces labor force participation.
  The national maternal employment rate is currently just under 70%, well below the rate for fathers and for workers without children. Even after accounting for work experience, mothers are 18 percentage points less likely to be employed than women without children; and it typically takes two years after the birth of the youngest child for maternal labor force participation to return to pre-birth levels.[5] Over recent decades, child care has become a more important influence on parental employment.[6]

- Child care matters for economic growth.
  Increased child care access—and the resulting rise in parental employment—leads to substantial earnings gains for families and boosts regional economic growth.[7]

This evidence is pertinent for the child care system in Pennsylvania. Economic evidence from parental survey data in 2022 established a significant economic burden (these results are discussed below). Nevertheless, parental needs are much greater than available care, even as the state provides a range of child care and pre-school supports (PA Ready to Learn Block Grant (RTL), PA Head Start Supplemental Assistance Program (PAHSSAP), PA Kindergarten for Four-Year-Olds and School Based Pre-K (K4 and SBPK), and PA Pre-K Counts (PAPKC). In 2023, Pennsylvania had places for 27% (13%) of four (three) year-olds. Program quality is rated average (with fewer than 7 benchmarks met). Funding is $8,400 per place (2025$), which equates to $1,200 per child aged 3.[8]

Overall, this economic evidence — combined with demographic and labor market trends for Pennsylvania — shows that the state's child care system would benefit from investment and or policy reform.[9]

3 Survey of Working Parents in Pennsylvania

This economic analysis is based on survey data from 572 working parents across Pennsylvania. The sampling frame is all working parents with children aged under 5; and the survey was administered in November-December 2025. The survey is administered to a single household member. The survey design is described in Appendix 1. Descriptive statistics are given in Tables A1-A2, along with Pennsylvania averages.

The survey sample matches the Pennsylvania population of working parents both in terms of demography and labor market participation. Specifically, the sample–population demographic distributions are similar with respect to gender (with 46% of the sample being fathers), age, and residence locality (metro area and urbanicity). Relative to the Pennsylvania, the sample has over-representation of African American parents, single parents, and college-educated parents. These over-samples are addressed in sensitivity testing.

Similarly, the labor market status of the survey respondents is equivalent to the Pennsylvania average. (The survey only includes are parents who either employed or looking for work; parents out of the labor force are excluded). More than three-quarters (81%) of respondents are working full-time (with 13% working part-time), as per the Commonwealth average for younger adults. However, average earnings per week are lower than the national average (at $1,000 *v.* $1,380); but household income is higher (at $88,400 *v.* $76,900). These differences are addressed in sensitivity testing below.

Overall, the survey yields valid and up-to-date evidence on working parents with young children across Pennsylvania.

4 How Pennsylvania Families Experience Child Care

Patterns of Child Care

Pennsylvania families rely on a range of child care options. Patterns for the working parents in the survey are shown in Table 1.[10] There are clear differences for parents of infants (aged 0-2 inclusive) versus parents of young children (aged 3-4 inclusive). For parents with infants in Pennsylvania, two-thirds rely on non-parental care. Two-fifths rely on center-based care; one-third on home-based non-relative care; one-fifth on home-based care by relatives. Notably, two-fifths rely on multiple care types.

Child care patterns are very different as young child are aged 3 and 4. Three-quarters rely on non-family care. Center-based care has risen to three-fifths, with parents substituting away from parental home

Table 1 **Working Families: Child Care**

	Child aged 0-2 (%)	Child aged 3-4 (%)
Center-based care	38	57
Home care: non-relative	37	32
Home care: relative	23	25
Care: Multiple types	42	42
Family care only	36	23

Source: Strong Nation PA 2025 parental survey, *N*=572 parents.

care and non-relative home care. This shift reflects greater investments and more supply options across Pennsylvania.[11] However, these parents are also juggling child care options at the same rate, with two-fifths relying on multiple care types.

Child care patterns have changed across Pennsylvania since 2022. Fewer parents are only providing child care at home (30% in 2025 *v.* 39% in 2022); and more children are in center-based care (48% *v.* 32%). The juggling act has remained broadly stable with parents reliance on multiple types of care (42% *v.* 45%). Also, child care patterns remain stratified by parental characteristics. African American parents are more likely to access center-based care and juggle multiple types of care. Socioeconomic factors remain very influential: center-based care is less common among parents who are single, low-income and not college-educated; these parents are more likely to rely only on their family care.

Financial Support for Child Care

Pennsylvania families receive financial support for child care from various sources. These sources are shown in Table 2. More than one-third of parents get support from their families. Government supports are also significant, including federal/Commonwealth tax credits and government subsidies. One-in-ten families receives financial support for child care from their church. Altogether, four-fifths of families receive direct financial support for child care; and this amount of support does not vary with child age. (This pattern is very similar to the national pattern.)

Many employers in Pennsylvania also help their workers manage their child care needs. Employer support includes flexible work schedules, information or guidance about child-care options, and sometimes financial assistance or direct child care (on or offsite). Overall, half of all working parents receive some kind of child care support from their employer. However, more than two-thirds of working parents say they are satisfied with the support they do receive; so the expectation that employers will help is low. Nevertheless, employers are helping more generously than in prior years. Relative to the survey in 2022, employers offer more help with scheduling, more financial support, more offsite care, and more informational support.

Child Care Challenges and Constraints

Parents must overcome various hurdles when trying to secure the child care they need. At the most basic level, they need care that is accessible so they can get to work and complete their shifts. They also need care that is affordable so that going to work makes financial sense. Finally, parents want care that is high-quality, including developmentally appropriate care in small group settings. Many families cannot find care that readily meets these criteria; these families have to compromise either on their hours of child care or on less-than-ideal care (or on both).

Table 2 **Child Care Support for Working Parents**

	Child aged 0-2 (%)	Child aged 3-4 (%)
Financial support:		
Family financial support	36	36
Federal tax credit	33	36
Government subsidies	25	22
Commonwealth tax credit	19	19
Church financial support	12	9
Any child care financial support	80	86
Employer support:		
Help with work scheduling	35	29
Financial support	17	16
Informational support	14	15
Employer care offsite	14	10
Employer care onsite	10	7
Employer provides any child care support	53	45
Satisfied with support from employer	67	59

Source: Strong Nation PA 2025 survey, *N*=572.

Table 3 shows the child care challenges that parents report. (The challenges vary only trivially by child age and so the results are reported for all ages combined). Both affordability and quality are issues for two-fifths of parents. (These are parents who have – in most cases – been able to find some child care and have compromised on these issues). The primary concern is accessibility, i.e., finding a child care place at all. Almost two-thirds of families report accessibility as a significant challenge: they struggle to find conveniently located care or care that matches their work schedule/shifts.[12] From a more promising perspective, these challenges are not as dire as previously: in 2025, fewer parents reported challenges across each criterion (-19%pts for affordability, -13%pts for quality, and -7%pts for accessibility *v.* 2022). Parental struggles with child care are becoming "easier" than they were immediately after the pandemic.

Many Pennsylvania families spend so much on child care that they can be classed as "care-burdened" (i.e., their spending is above a reasonable threshold for any household budget). This term can be compared to "rent-burdened" (i.e., when families cannot afford to live in their local neighborhood). In fact, the care-burden is greater than the rent-burden. Two-fifths (41%) of parents report spending "much more" or "a bit more" on child care than they do on housing; and another 30% report spending "about the same". For many Pennsylvania parents, child care is more expensive than housing.

Finally, child care decisions and housing decisions are intertwined. Finding child care close to where one lives appears to be very challenging. Many families have to look at this decision from the opposite perspective: finding a place to live that is close to their child care. As shown in Table 3, more than one-third of parents report that child care challenges "impacted on their decision about where to live". As well as assessing how much they can work in terms of the availability of child care, some families must also consider what housing they can afford after they have paid for child care.

Table 3 **Child Care: Challenges and Constraints**

	Working Parents (%)
Significant challenges in finding child care that is:	
Affordable	43
High quality	39
Accessible [a]	64
Matches schedule	35
Conveniently located	30
Available on emergency basis	27
Flexible to work shifts	26
Available slots	22
Offers Special Education services	15
Child care spending relative to spending on housing: [b]	
Child care expenses burden greater than housing burden	41
Housing burden greater than child care expenses	30
Child care challenges impacted decision on where to live	37

Source: Strong Nation PA 2025 survey, *N*=572. *Notes:* [a] Accessible includes affirmative responses on location, scheduling, flexibility. [b] Question: "Approximately, how does your monthly household spending on child care compare to your monthly household spending on rent/mortgage/housing?"

5 How Inadequate Care Affects Work

Child care directly impacts parental employment, productivity, and career opportunities. For working parents in Pennsylvania, the adverse impacts of inadequate child care are shown in Figures 1 and 2.

On a continuous basis, parents report how problems with child care reduce their productivity and time at work. Within the past three months, two-thirds of parents have experienced disruptions to their work day (either arriving late or leaving early). One-half have missed either a shift or a full day of work. As well, two-fifths of parents report having been distracted when at work. Inadequate child care imposes labor market penalties on the majority of working parents. Moreover, these penalties are at similar intensity to those in 2022: disruptions are more common in 2025 (+6%pts); but missed work and work distractions are less frequent (-2%pts and -5%pts respectively *v.* 2022).[13]

Problems with child care have persistent adverse effects on parents' jobs and careers. These adversities are grouped into three categories:

- *Parents are penalized at work.* 1-in-3 have had their pay or hours cut; 1-in-4 have been reprimanded by a supervisor; and 1-in-7 have been demoted (or even lost their job).
- *Parents have had to reduce their own work effort.* 2-in-5 have reduced their hours; 1-in-3 have moved to part-time; and 1-in-5 have had to quit a job entirely.
- *Parents miss out on career opportunities.* 1-in-3 parents turn down training and or a job offer; 1-in-4 have had to turn down a career promotion.

For Pennsylvania parents these long-term penalties in 2025 are only modestly lower than they were in 2022. At-work penalties are modestly lower (down by 2-3%pts for each item in 2025). Job reductions show a mixed trend. Penalties to career progression are worse in 2025 for all three items: training, job offers and promotions (by 10%pts, 3%pts, and 3%pts respectively). Overall, the trend is for no change in adversities from inadequate child care across Pennsylvania.

Figure 1

Over the past three months, how often have you had these work-related issues because of problems with child care?

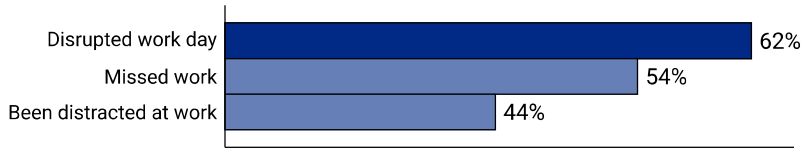
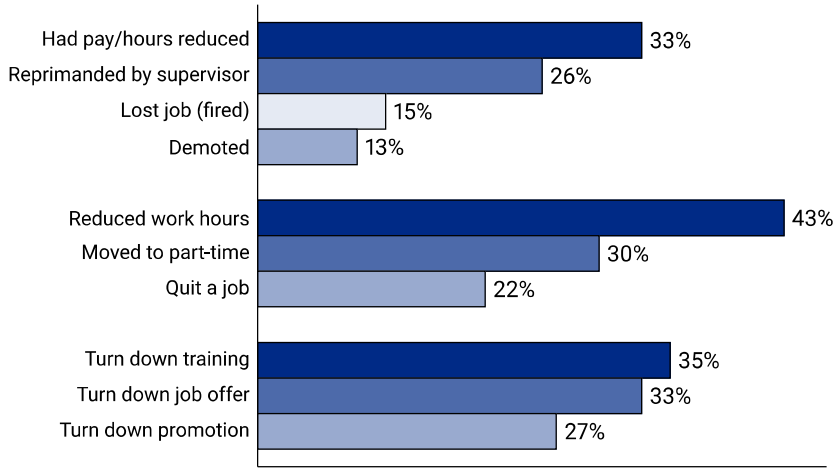


Figure 2

Since your children under age 5 were born/adopted, have you experienced any of these work-related issues because of problems with child care?



This survey evidence shows how insufficient access to affordable, reliable child care leads to sizable short- and long-term economic penalties for working parents. These losses affect earnings, job stability, and career advancement, imposing burdens on Pennsylvania's workforce and reducing economic growth.

6 Economic Burdens of Inadequate Child Care

Methodology

The economic impacts of inadequate child care are calculated for three perspectives – workers, businesses, and taxpayers. The calculations are drawn from a multi-period economic model detailed in Appendix 2, along with parameter values in Table A4.[14]

For parents, the burdens of inadequate child care are mediated through their labor market experiences (job exits, reduced pay per hour, diminished career pathways). These impacts reduce household income both immediately and over time (and force parents to pay job search costs). The survey evidence from Figures 1 and 2 (adjusting for gender, race, and household income) is used to model parental labor market experiences over the child care years.

For businesses, economic burdens arise mainly through disruptions to the workforce, including reduced productivity and shorter employee tenure.[15] Similarly, these costs are immediate and long-lasting.

Finally, for Pennsylvania taxpayers, inadequate child care reduces tax revenues and the size of the tax base. Both federal and state tax revenues are affected. Tax burdens are calculated from current federal marginal tax rates and the weighted-average of Pennsylvania state income and sales taxes.[16]

Economic burdens are reported as the average per parent – not the amount per parent who is adversely impacted. Per parent, the burden is expressed as: (1) annual amount when the family has a child aged 0-4; and (2) full childhood amount as a present value lump sum at birth. These amounts capture the immediate burden and the full burden on lifetime earnings beyond age 4. In addition, aggregate results are calculated for the Pennsylvania economy with 860,000 working parents and 667,000 children aged under 5. Separately, these burdens are reported for families based on the sector they work in. Each relevant burden is compared to to prior evidence from 2022.

Annual Burdens

Burdens per working parent from inadequate child care are given in Table 4. Each year, the parental burden is $5,570. Most of this burden is lost earnings (either from job loss, lower hourly wages or fewer hours); one-fifth is job search costs. The burdens are reported as averages; but for some parents the burdens will be very modest and yet some parents will lose their jobs. On average, the child care burden exceeds 10% of average wages per worker in Pennsylvania. In real terms, this burden is higher by 7% than the burden in 2022: the adversity of child care has only changed modestly since 2022, but the economic burden per adversity has increased.

Table 4 **Annual Burden of Inadequate Child Care: Pennsylvania**

	Burden per Working Parent
Earnings loss	$4,650
Search costs	$920
Working parent total	*$5,570*
Productivity loss	$400
Management burden	$1,300
Firm total	*$1,700*
Federal tax loss	$890
State tax loss	$570
Fiscal total	*$1,460*

Source: Strong Nation PA 2025 survey, *N*=572.

Losses to businesses from inadequate child care are also significant: these amount to $1,700 per working parent per year. Most of the burden is extra costs to manage the workforce; one-fifth is from direct productivity losses. On average, the child care burden exceeds 10% of the employer cost of compensation for hiring an individual worker.[17]

Finally, inadequate child care reduces tax revenues by $1,460 per working parent per year. These losses are primarily federal taxes, with state tax losses caused by state income taxes and regressive consumption taxes on low income households. This burden exceeds 10% of the state and local tax contributions per capita in Pennsylvania.

Burdens over Childhood

Working parents experience child care burdens each year before their child enters preschool (or school) at age 5; these burdens also persist as the parents attempt to recoup their time out of the workforce. The full childhood burden is therefore the annual burden times five years plus the lingering impacts of lower pay, promotions, and experience even as the children are in school.

Table 5 **Burden over Childhood of Inadequate Child Care: Pennsylvania**

	Burden per Working Parent Child age 0-8
Working parent	$38,040
Firm	$9,930
Taxpayer	$9,910

Notes: Per child aged 0-8 expressed as PV at birth ($\rho = 3\%$).

Full childhood burdens are shown in Table 5. Expressed as a lump sum at birth, working parents face a total economic loss of $38,040 from inadequate child care. Most of this childhood burden is before the child enters school, but a significant amount is caused by lower earnings trajectories. As context, the burden of inadequate child care is equates to more than one-half of a full-time work year. These amounts are significantly higher than reported in 2022 because of new evidence that the impacts of inadequate child care persist for more years (Jackson et al., 2025); the model is therefore extended through three additional years with a slower decay rate per annum.

Businesses face a total economic burden of $9,930. Most of this burden is when the child is aged 0-4; beyond this age, direct productivity losses are small and firms adjust wages (and workers) to match productivity. Separately, total tax losses within Pennsylvania are $9,910 from inadequate child care.

Aggregate Burdens across Pennsylvania

The aggregate burden for the Pennsylvania economy is the burden per working parent times the 0.87 million working parents of children aged 0-4. The corresponding annual and cohort burdens are given in Table 6.

Table 6 **Aggregate Burden for Pennsylvania Economy**

	Aggregate Burden ($ Billions)	
	Annual	Birth Cohort
Working parents	$4.87	$6.56
Firms	$1.49	$1.71
Taxpayers	$1.28	$1.68

Notes: Annual burden: 874,000 working parents. Birth cohort: PV from birth for 172,500 parents.

The aggregate annual burden across all working parents amounts to $4.9 billion. In addition, there are burdens to businesses amounting $1.5 billion. Thus, the total social burden of inadequate child care is $6.4 billion per year. Separately, tax revenue is diminished by $1.3 billion. As context, this equates to $>2\%$ of general fund state spending in Pennsylvania; and it exceeds the annual spending in Pennsylvania on Corrections, Policing and the Judiciary combined (at $4.5 billion).[18] Measured in terms of adverse economic

activity in all three domains, the annual burden is $7.7 billion.

The aggregate burden per birth cohort is given in the final column of Table 6. (This calculation is based on the assumption that child care and preschool options remain unchanged). This aggregate burden shows the total amount per cohort (of 0.17 million working parents); it is expressed as a present value lump sum at birth. For working parents, the burden is $6.6 billion. For firms, the burden is $1.7 billion. And for taxpayers, tax revenue will be lower by $1.7 billion as a result of inadequate child care. These burdens establish the persistent impacts of inadequate child care.

However, the burden for Pennsylvania is lower than the national average: relatively, Pennsylvania parents experience fewer challenges and constraints (Belfield, 2026).[19]

Finally, the social burden in 2026 is significantly higher than calculations for Pennsylvania in 2022 (Ready Nation, 2022). For working parents, the annual burden has increased by 20% ($4.1 billion to $4.9 billion). For businesses, the annual burden is stable (at $1.5 billion). For taxpayers, the annual burden has increased by 30% ($1.0 billion to $1.3 billion). The social burden – parents plus business – has grown from $5.6 billion in 2022 to $6.4 billion in 2026. The economic activity burden – across all three domains – has grown from $6.6 billion to $7.7 billion. This growth is explained by several key trends: an increase in the price of child care; growing numbers of affected parents; and higher labor market penalties from inadequate child care. As well, based on new evidence, the share of the burden has shifted more toward workers and away from businesses.

Sensitivity Testing

The results are tested for robustness using three complementary techniques:

- Monte Carlo sensitivity testing is applied to the distributions of individual earnings; the job/quit rate; and months unemployed (from Appendix 3, Table A5).
  Results per working parent for annual and childhood burdens are given in Appendix Table A5. The standard deviation of the per working parent annual burden is $1,170; this is ±25% of the expected value. The estimated minimum value is significantly above zero, at $2,280; the estimated upper bound is $10,540 (+90% over the expected value). Similarly, business and taxpayer burdens are estimated within ±22% of the expected value. For the childhood burdens, the ranges are narrower: standard deviations are ±8% of the expected values. In none of the simulations is the economic burden below zero.
- Structural sensitivity is considered for sample selection and burden decay.
  The model results are conservative for several reasons. First, the burdens exclude those parents who are not in the labor force.[20] Second, the developmental burden to children from limited early education options is omitted from these calculations. Third, more recent evidence indicates that the burdens are very persistent, possibly well after children enter school.[21]
- Sampling variation is modeled for parental characteristics (gender, race, and education).
  Separate testing by parental characteristics show greater impacts on mothers and African American families. However, because of differences in opportunity cost, the economic burdens are similar across parental characteristics.

Overall, the full economic burden of inadequate child care is expected to be larger than the model results shown in Tables 4 and 5.

9 Appendix 1: Survey

Sampling Frame

Zogby Analytics was commissioned by Strong Nation to conduct an online survey of 572 adults in the Commonwealth of Pennsylvania who are employed and have a child under the age of 5. Using internal and trusted interactive partner resources, thousands of adults were randomly invited to participate in this interactive survey. Each invitation is password coded and secure so that one respondent can only access the survey one time.

Based on a confidence interval of 95%, the margin of error for 572 is $\pm$ 4.1 percentage points. This means that all other things being equal, the identical survey repeated will have results within the margin of error 95 times out of 100. Subsets of the data have a larger margin of error than the whole data set. As a rule we do not rely on the validity of very small subsets of the data especially sets smaller than 50-75 respondents. At that subset we can make estimations based on the data, but in these cases the data is more qualitative than quantitative. Additional factors can create error, such as question wording and question order.

Descriptive Statistics

Table A1 **Working Parents: Descriptive Statistics**

	Survey (Percent)	**Pennsylvania** (Percent)
Child aged 0-4 (incl.)	100	
Multiple children aged 0-4	26	-
Children aged 0-2	66	-
Children aged 3-4	52	-
Race/ethnicity:		
White	64	76
Hispanic	7	13
African American	24	12
Other	5	2
Status:		
Married	53	51
Single parent	41	25
Female	54	51
Education:		
HS dropout	1	9
HS graduate	31	26
Some college	19	13
AA degree	10	14
BA degree	21	24
MA plus	17	14
Age:		
Age 18-24	13	17
Age 25-29	20	22
Age 30-34	27	28
Age 35-39	17	21
Age 40+	24	14
Region:		
Philadelphia Metro	41	42
Central PA	37	38
Pittsburgh Metro	22	19
Urban	34	56
Suburban	49	22
Rural	17	22

Sources: Strong Nation PA Survey 2025, *N*=572; PA population. Pennsylvania data from U.S. Census (2024); Census Bureau Profile, 2024. *Notes:* Percentages are for household respondent. Sampling frame described in Appendix 1.

Table A2 **Working Parents: Labor Market Status**

	Survey	Pennsylvania
Works full-time	81%	80%
Works part-time	13%	15%
Unemployed	5%	5%
In college	2%	2%
Earnings (per week)	$1,000	$1,380
Hours (per week)	35	36
Wage (per hour)	$30	$39
Household income (pa)	$88,400	$76,900

Source: Strong Nation PA Survey 2025, *N*=572. Pennsylvania: DLI, 2025; Census, 2025. *Notes:* Percentages are for household respondent. College enrollment joint with labor market participation. Earnings data excludes non-workers. Dollar values are 2025$, rounded to $10.

10 Appendix 2: Economic Model

A multi-period, limited-horizon economic model is used to calculate losses caused by inadequate child care. The model estimates the economic consequences of inadequate child care from three perspectives: working parents; businesses; and taxpayers. The full burden is the sum of the working parent and business perspectives. (The taxpayer perspective is nested within the working parent perspective; so it cannot be summed together with the other two burdens). This model is harmonized to prior models, both at national and state levels.

Calculations are per working parent (not per affected working parent) per year and over childhood years. Immediate consequences are annual amounts when a child is any age under 5. These calculations are then aggregated across the population of working parents in Pennsylvania with children under 5. Childhood estimates are modeled per birth cohort (e.g., children born in 2025) up to child age 8. Aggregated estimates are per Pennsylvania birth cohort.

The model is populated by combining the survey data and Pennsylvania-specific economic data. Appendix Table A4 provides full information on model variables, parameter values and sources. (All figures are in 2025 present value dollars at discount rate ρ.)

Earnings Losses:

- As a result of inadequate child care, working parents are modeled probabilistically into worse economic states (relative to a scenario where parents do not face child care challenges).
- The work states are: (i) job exit; (ii) fewer work hours; (iii) reduced pay per hour; and (iv) less work capital. State transitions are modeled over each year of childhood aged 0-4 and then decay to zero impact after the child is aged 8.
- Baseline full-time earnings y_b are adjusted to account for labor market participation lf_t, lp_t, lu_t rates.
- Adjusted earnings y_c are modeled to account for the (i)-(iv) distortions (weighted across all parents and regression-adjusted for age (linear and quadratic), education, and gender). These distortions yield an aggregate wage penalty *v* and unemployment penalty *m*.
- Workers incur a dynamic proportion ϵ of earnings penalties. Firms incur the residual proportion $(1-\epsilon)$, which decays to zero after child enters school.
- Average annual earnings growth η_t is modeled per age group. Earnings growth is modified downward by λ_t to account for lower training, education, promotions.
- Workers incur job search costs *j* as a % of y_b, adjusted for the job quit/exit rate.

Output Losses:

- Output losses are the sum of: the dynamic proportion (ϵ_f=1-ϵ_w) of the wage penalty *v* borne by the employer; plus direct employment on-costs *z* and hiring costs *d* payable by the firm. These costs are a function of the quit/exit rate and the months unemployed. (Managerial costs attributable to low worker performance are set at zero.)

Tax Revenue Losses:

- Federal income tax losses are from taxable earnings y_c multiplied by the marginal federal tax rate *r*.
- Losses in state/local taxes are from taxable earnings y_c multiplied by average tax rates across Pennsylvania (weighted for population). Marginal state income taxes s_y are based on gross incomes. Marginal state non-income taxes s_s are applied with adjustments for tax-exempt consumption. Local taxes are averaged per county.

Table A4 **Model Parameters**

Variable/parameter		Female	Male
Working parents:			
y_b	Baseline individual earnings p.a. (full-time)	$53,500 (6,600)	$74,400 (7,700)
lf_t	Working full-time	0.77	0.87
lp_t	Working part-time	0.14	0.02
lu_t	Unemployed	0.07	0.04
q	Job quit/exit rate p.a. Δ	0.11 (0.03)	0.05 (0.01)
m	Months unemployed p.a. Δ	0.42 (0.3)	0.18 (0.2)
j	Job search costs Δ (% of y_b)	8.4	8.4
v	Wage penalty Δ (% of y_b)	4.9	6.4
η_t	Earnings growth p.a.: experience	2.4	2.8
λ_t	Earnings growth p.a.: human capital penalty Δ	-1.2	-1.7
ϵ_{wt}	Earnings loss incurred by worker (%)	0.92	0.92
Business productivity:			
z	Employer costs for employee compensation	0.30	
d	Hiring costs (% of y_b)	0.25	
ϵ_{ft}	Earnings loss incurred by firm (%)	0.08	
Tax code:			
r	Federal tax rate	0.18	
s_y	State income tax rate	0.07	
s_s	State non-income tax rate (net exemptions)	0.03	
ρ	Discount rate	0.03	

Notes/Sources: Standard deviation in parentheses. FRED, Federal Reserve Bank of St. Louis: y_b – U.S. Census Bureau, Median Earnings Pennsylvania (2025); lf_t, lp_t, lu_t, m – U.S. Bureau of Labor Statistics, Unemployment Rate (11/2025). j, d – Boushey and Glynn (2012); Work Institute (2017). q, v – Survey calculations; Humphries et al. (2024); Jackson et al. (2025). η_t, λ_t – Guvenen et al. (2022). ϵ_w – by assumption. z – Bureau of Labor Statistics, (2025); ECEC includes paid leave, supplemental pay, insurance, retirement/savings, and other legally required benefits. r, s_y, s_s – for income tax, no dividend tax or exemptions; state/local sales taxes adjusted for tax-exempt consumption from IRS (2025), Tax Policy Center (2025), ITEP (2024); and Tax Foundation (2025). State/City tax from: Tax Foundation, 2025; Tax rate from Tax Administration (2025). ρ – Moore et al. (2013). Parameters adjusted for non-work status and household size. Δ: change caused by inadequate child care. 2025 dollars.

11 Appendix 3: Sensitivity Testing

Table A5 **Monte Carlo Sensitivity Tests**

	Inadequate Child Care Burden per Working Parent			
	Mean	**Std Dev.**	**Min.**	**Max.**
Annual burden:				
Working parent	$5,570	$1,170	$2,280	$10,150
Firm	$1,700	$410	$ 620	$3,300
Taxpayer	$1,460	$310	$590	$2,630
Childhood burden:				
Working parent	$38,040	$2,940	$27,660	$49,370
Firm	$9,930	$950	$6,450	$12,880
Taxpayer	$9,910	$770	$7,190	$12,870

Notes: 1,000 simulations for distributions of y_b, v, m (Appendix Table A4). Mean values as per Tables 4-5. Dollar values are 2025$, rounded to $10.

Notes

[1]The labor market evidence includes Belfield (2018); Cascio (2018); Ruppanner et al. (2019); Ho and Pavoni (2020); Borowsky et al. (2022a); Moschini (2023).

[2]The eligible population depends on family composition and size and the respective labor force participation rates. These estimates are sourced from Census population data on children aged 0-5 Census Pennsylvania, 2025. Adjustments for household composition (twins, siblings, non-parent families) and labor force participation reduce the number of parents who are affected (CDC, 2025).

[3]For evidence, see the new national review by Belfield (2026).

[4]See Herbst (2022) and NCES Digest of Education, 2024, Table 202.20.

[5]This national rate reflects a modest increase since 2010, having been around 65% from 1990 to 2010 (Herbst, 2022; Borowsky et al., 2022b).

[6]See recent reviews by CED (2024); CCAA (2025); Hartley et al. (2024).

[7]National/state studies estimate economic returns of 2.3 times the cost of providing child care (Goldin et al., 2022; Shenhav, 2023).

[8]Evidence on child care in Pennsylvania is from **??**Act for Children; **??**Child Care Aware; **??**Pennsylvania Department of Early Childhood; **??**Pennsylvania Dept. Human Services; and NIEER, 2024. See also Flores (2025).

[9]Specific policies are not evaluated here. They might include: tax credits for parents; public subsidies for care options; and employer supports (e.g., on-site facilities, tax incentives).

[10]Records from the Pennsylvania Yearbook from National Institute for Early Education Research show 13% and 26% of children aged 3 and 4 in pre-school in 2024.

[11]These investments include: PA Ready to Learn Block Grant (RTL), PA Head Start Supplemental Assistance Program (PAHSSAP), PA Kindergarten for Four-Year-Olds and School Based Pre-K (K4 and SBPK), and PA Pre-K Counts (PAPKC) for PA (NIEER Pennsylvania, 2024.

[12]These findings are similar to – but moderately better than – national evidence (Belfield, 2025; National Household Expenditure Survey, 2023; Bishop (2023). The advantage is likely attributable to the greater availability of center-based care in Pennsylvania.

[13]With expanded child care opportunities across Pennsylvania, these relationships are moderately weaker than those in state-level studies and prior national studies (Talbert et al., 2018; Bishop, 2023).

[14]This model has been applied in prior studies (Goldberg et al., 2018; Bishop, 2023; NYC DEC, 2023) and in a new national model (Belfield, 2026). The analysis here is deliberately harmonized to these studies. All figures are reported in 2025 present value dollars.

[15]Firms experience lower output and revenue when their workers are less productive. These businesses do respond by reducing wages, but these responses are lagged and not precisely aligned with productivity losses. Also, business costs increase: high worker turnover leads to additional recruitment and hiring expenses, as well as higher operational and managerial costs to offset the loss of workplace knowledge and experience.

[16]Marginal tax payments are estimated as 20% of gross earnings, divided according to the federal/state weighting for Pennsylvania. As of January 2025, Pennsylvania total income tax rates are 6.34% [3.75%], with very low exemptions/deductions (Tax Administration (2025). Full information on tax rates is given in the Notes to Appendix 2, Table A4.

[17]Most employees at each business are not working parents with young children. So these burdens may not be obvious to employers.

[18](Pennsylvania Treasury, 2023-24. General fund spending from Urban Institute, 2025.

[19]Also, earnings in Pennsylvania are lower than the national average.

[20]See Jackson et al. (2025); Humphries et al. (2024).

[21]In addition, burdens on other family members are not considered. Firm burdens exclude managerial and administrative costs; these are unlikely to be zero if worker productivity is disrupted. Including these factors would increase the economic burden.

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