Wage and Employment Trajectories in Early Childhood Education:

Insights from Ohio's State Unemployment Insurance Records, 2003-2023

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INTRODUCTION

Teacher turnover in the Early Care and Education (ECE) industry remains a persistent problem. Estimates of within-year teacher turnover in ECE have ranged from lows of 9 percent for teachers in Head Start (Markowitz, 2024), to highs of 37 percent among teachers at child care providers that receive public funding (Bassok et al., 2021). The most recent Quarterly Workforce Indicators data show an average 12 percent quarterly turnover rate in Ohio's ECE sector in 2023 (U.S. Census Bureau, 2025). While turnover in child care is lower than in the retail apparel and restaurant industries, it is higher than overall quarterly turnover in the state (about 9 percent); notably, it is substantially higher than turnover in elementary and secondary education, which is about 6.5 percent per quarter. The Ohio Child Care Resource and Referral Association (OCCRA) maintains Ohio's childcare professional registry. In partnership with the state of Ohio, OCCRRA developed the Workforce and Program Analysis Platform to harness the power of Ohio's registry data. These data indicate that in fiscal year 2023, about 3 percent of lead teachers and 5 percent of assistant teachers left their positions each month (Ohio Child Care Resource and Referral Association, 2023).

Despite the elevated rates of worker turnover in ECE, relatively little is known about the dynamics of employment in the ECE sector. How do workers enter and exit the field, and how are they retained? Answering these questions requires data that tracks individual workers over time, before they enter the ECE sector and after they leave it. Hampered by a lack of such data, researchers have not been able to track ECE workers before and after they join or leave the ECE sector. This knowledge gap makes it difficult to understand how we can attract new workers and retain existing ones.

Critical Problem: Despite high level of workforce turnover in the early childhood education, very little is known about Workforce Dynamics – workers joining, remaining in, and leaving the ECE sector. We do not know where Ohio's ECE workers go after leaving the ECE sector.

The problem of high turnover in ECE trickles down to child care providers, families, and finally, state budgets. Based on our work with Ohio childcare providers (Jones et al. 2025), among center-based providers that report wanting to increase their capacity, over 50 percent cite challenges recruiting and retaining quality employees as a limiting factor. The missing child care workforce results in consequences for families and children: childcare problems cause an average of 45,000 employees to miss work every month across the US (BLS 2025), and caregiver turnover in ECE has been linked to lower levels of school readiness (Markowitz, 2024). Employee absenteeism and school unreadiness translate into budgetary challenges for states, whose tax revenue may be lower, social program expenditures may increase, and who ultimately foot the bill for educational delays among its children. Thus, it is critical for Ohio to understand the dynamics of its ECE workforce.

In this report, we document analyses of a previously unleveraged data source on the ECE workforce in Ohio: state Unemployment Insurance (UI) wage records. State UI records include quarterly wage earnings and hours worked for every employee in the state that works for an employer that participates in the UI system. In practice, this amounts to about 96 percent of wage and salary workers (BLS 2025). The UI data track the same worker across time, and across employers. We link

the UI data with data from the Quarterly Census of Employment and Wages, which captures employer characteristics like industry. Together, these data allow us to identify all employees of firms in the child care industry, and follow these workers across time. We can track their industry and earnings before they joined the ECE sector, their earnings and tenure while employed in the ECE sector, and the industries they joined after leaving the ECE sector. Our analyses include all workers with UI wages at an employer in the child care sector in Ohio between 2003 and 2023.

Overview of this report:

- Describes novel analyses using Ohio's state Unemployment Insurance Wage Record data to track child care employees over time
- Includes all child care industry workers who were employed with a firm that participated in the state UI program between 2003 and 2023
- Describes the evolution of the number of ECE jobs over years, and the median annualized earnings of those jobs
- Tracks the most common industries that workers came from before entering the ECE sector (contributing industry) and the most common industries they left ECE to join (receiving industries)
- Reports annual earning that ECE workers made in their previous and subsequent non-ECE jobs, relative to what they earned in ECE

RESEARCH QUESTIONS & KEY FINDINGS

Research Question 1: How many child care jobs do we see in Ohio's UI data each year, how many employment relationships begin and end each year, and what are the median annual earnings of these jobs?

Key findings:

- The number of UI -covered child care jobs in Ohio increased by about 47 percent between 2003 and 2019, to a high of 39,882 jobs in 2019.
- The number of child care jobs in the state dropped by about 19 percent in 2020 relative to 2019; employment has not fully rebounded, with only 35,438 child care jobs observed in 2023.
- There was no growth in real median earnings in the child care industry between 2003 and 2019; since 2019, median earnings grew about 14 percent to a high of $26,039 in 2023; the growth in earnings since 2019 was driven by new jobs.

Research Question 2: In which industries do individuals work before they start in child care? What did they earn before joining the child care sector?

Key findings:

- Among workers who joined the child care sector, about 30 percent did not work in a UI-covered job in the four quarters prior to starting in ECE.
- About 22 percent of new ECE employees in Ohio previously worked at a job in Food Service and Drinking Places.
- About 11 percent of new ECE employees previously worked in Administrative Support Services, where they had similar median earnings to their ECE jobs.
- K-12 education, Nursing and Residential Care Facilities, General Merchandise Stores, and Social Assistance all contributed at least 5 percent each of new ECE workers.
- Most new ECE workers earn more in their ECE job than they did in their prior job, but only by a few thousand dollars per year.

Research Question 3: How long do new workers stay in the child care industry after they start? How long do new workers stay with the same employer in the child care industry after they start?

Key findings:

- 80 percent of new ECE workers are still in the ECE industry after their first year of work.

- 57 percent of workers who join the child care industry remain in the industry for less than two years.
- 22 percent of workers who start a new job with a child care provider remain in the job for less than a year.
- Persistence in the industry has decreased slightly over time, with worker who started in 2008 about three percentage points (7 percent) more likely to remain in the industry after two years than workers who started in 2013.

Research Question 4: What industries do former child care workers transition to after leaving the child care industry? How do their wages in these industries compare to their wages before leaving child care?

Key findings:

- After leaving in the ECE sector, 31 percentof leavers had no additional UI-covered employment in the study period; this share is decreasing over cohorts.
- 16 percent of leavers went to jobs in K-12 education; median annual earnings for those who left ECE for K-12 education increased by about 45 percent, from $19,822 to $28,718.
- About 17 percent of leavers went to jobs in health-related fields, which paid about 50 percent more than ECE.
- About 10 percent of ECE leavers moved on to jobs in Administrative Support Services, where they earned about 33 percent more; about 10 percent of leavers went to jobs in Food and Drink service, where their annual UI-covered wages were about 18 percent lower (excluding tips).

DATA AND METHODS

In 2023, the Administration for Children and Families published a series of reports through the Building and Sustaining the Child Care and Early Education Workforce (BASE) project. These reports were intended to collect research on child care turnover, and outline strategies to combat it. One set of these reports presented the opportunities to use state Unemployment Insurance Wage Record data to fill the gap in our knowledge on the dynamics of the ECE workforce. The BASE reports outlined opportunities that the UI data present for ECE workforce research, best practices for their analyses, and demonstrated their usefulness with a case study using Illinois's UI data (Wiegand, Goerge, Porcelli, et al., 2023; Wiegand, McQuown, and Goerge, 2023; Wiegand, Goerge, Kang, et al., 2024). The analyses in this study follow the methodology developed by the BASE project team. More details about the specific methods used in this report can be found in the accompanying Methodological Appendix section of the report.

Definitions

- **Child Care Employers or Providers:** Employers who we identify as primarily operating in the "Child Day Care Services" industry, or NAICS code 624411.
- **Child Care Employees or Workers:** Employee who ever work for a child care employer during the 2003 to 2023 period.
- **Stable or Qualifying Child Care Employment Quarter:** An employment arrangement between an employer and employee that lasts at least three consecutive quarters, where we can infer stable, or full, employment for the middle quarter.
- **Child Care Employment Stint or Spell:** A consecutive set of stable employment quarters where we observe an employee with earnings from the same child care employer, or in the industry.
- **Child Care Entrant:** A worker whom we observe as beginning a new stable employment job in the child care industry, with no child care employment in either the previous four quarters or two years, depending in research question.
- **Entrant Cohort:** A group of workers who entered the child care industry in the same year (we report on entrants in 2014, 2018 or 2022).
- **Contributing Industry:** For child care entrants, their primary employment industry prior to joining child care.
- **Industry or Employer Persistence:** A measure of retention in the child care industry or job, measured by the share of all workers starting a new job in a year who are still employed in the industry (or job) after X years.
- **Child Care Leaver:** A worker whom we observe as ending a stable child care job, and who has no additional employment in child care in the UI data in the next four quarters.
- **Exiting Cohort:** A group of workers who leave the child care industry in the same year (we report on leavers in 2014, 2018 or 2022).
- **Receiving Industry:** For child care leavers, their primary employment industry after they leave child care.

Data

We use Ohio's Unemployment Insurance Wage Record (UI) data from 2003 to 2023. These data are at the worker level, and capture information about all the worker's employment arrangements in each quarter. For each worker, we observe the total earnings and number of weeks worked for each employer in the quarter, as well as the total earning and weeks worked across all employers in the quarter. We are able to track the same worker across quarters, and view all their employment arrangements during the entire sample period.

We link these data with the Quarterly Census of Employment and Wages (QCEW) data, which we use to identify employers, whom we identify a primarily operating in the "Child Day Care Services" industry, or NAICS code 624411. We call these employers *child care employers or providers* throughout. We identify any employee in the UI data who had reported earnings from a child care provider between 2003 and 2023, and call these *Child Care Employees* or *Workers*. There are a total of 309,382 unique employees who worked in child care in Ohio between 2003 and 2023; 290,086 of these are stable employees in the sector who had earnings in at least three subsequent quarter.

For each of these child care workers, we collect all their quarterly UI records between 2003 and 2023 in their child care jobs and any other jobs they work at. This creates a record of each worker's entire employment history between 2003 and 2023, including the industry of each of their jobs, and their quarterly wages and hours worked at each employer. We call this set of records our base sample.

Data Limitations

- *Home-Based Providers* – The UI data only include records for wage-earnings employees and their matched employers. Thus, owner-operators or other employees of family child care homes who do not earn UI wages will not be included in the data. Of the 7,870 license child care providers in the state, 1,795 are Type B homes (serving 6 children or less), and 348 are Type A homes (serving 7-12 children). Data from the National Survey of Early Care and Education 2019 suggest that about 94 percent of all educators in the licensed child care sector work at child care centers (Kim and Austin, 2025). However, the estimates in this report are not informative of people moving in and out of home-based child care provision.
- *Child Care Workforce: Teachers versus Other Staff* – The UI data do not identify employee role. Thus, we cannot distinguish between teaching staff and other staff in our analysis. Estimates from the National Survey of Early Care and Education 2012 survey indicate that about 86 percent of center-based staff were teachers (National Survey of Early Care and Education Project Team, 2013).
- *Department of Education Licensed Preschools* – Some preschool teachers in the state of Ohio work for local school districts in preschools licensed through the Ohio Department of Education and Workforce (DEW). These teachers are not included in our sample unless they also worked in a child care center licensed by the Department of Children and Youth (DCY) during our sample period.

- *Earnings, not Wages* – The UI record data report quarterly earnings for each employment relationship. For hourly wages jobs, total earnings captures both wages and the number of hours worked. This is a limitation of the UI data when comparing earnings across jobs, since it is impossible to infer which job paid more per hour.

Methods and Samples

Research Question 1

To answer this research question, we use the base sample and count the number of employee-employer pairs where we observe at least one stable employment quarter in the year. This gives us the number of stable child care jobs each year. We also count the number of stable jobs that ended in a year (i.e. the employee's last stable employment quarter with the employer occurred in the year), as well as the number of jobs that began in a year (i.e. the employee's first stable employment quarter with the employer occurred in the year). We only count employment relationships that are brand new, or terminal; these measures do not include workers who leave and return to a job with the same employer. Note that for these measures, an individual worker may appear more than once in the count of jobs if they had stable employment with multiple child care employers in a year. For instance, if a worker ended a job with one child care employer and began with a second child care employer in a year, they would be counted twice in the total number of stable jobs for that year, and also be included in both the number of new and number of exiting jobs for the year.

Using this same sample, we calculate the annualized earnings for each job by using the earnings from the first observed stable employment quarter in a year for each job. We then multiply the quarterly earnings by four to obtain the annualized earnings. We adjust these earnings into 2023 real dollars, and report on the median earnings across all child care jobs in the state for each year. We also show the median annualized earnings for jobs that begin and end in each year.

Research Question 2

The second set of analyses document prior experiences before joining the child care industry. To conduct this analysis, out of the base sample, we identify three cohorts of new entrants to the child care workforce. These are people who we observe beginning a new job with a child care employer in 2014, 2018 or 2022, and who had no previous UI employment in child care in the sample period. We classify these workers as *child care entrants,* and use this sample to learn about work trajectories before entering the child care sector.

For child care entrants in the three cohorts, we look back to find their last stable employment job in the four quarters prior to when they started in ECE. For some workers, we do not observe any previous jobs in the UI data in the four previous quarters. For other, we do observe another job in the four quarters prior to joining ECE, and record its industry (*contributing industry*). For workers who simultaneously held multiple jobs before beginning their child care stint, we find the job they held most recently and record its industry. We also include jobs that continued after the start of the child care employment stint. Finally, we record the earnings in their last stable employment quarter in the

worker's contributing job, annualize the earnings, and report the median earnings by contributing industry. We compare these to the median annualized earnings in the first stable quarter of child care employment.

Research Question 3

The next research question explores persistence in the industry or a child care job. Out of the base sample, we selected workers who began a new child care job in 2008 through 2013, and who had no child care employment in the previous two years. We were able to follow these workers for 10 years after their first observed child care job. For each cohort, we estimated the share of all workers who were still in the child care industry, or still with the same employers, after each year.

Research Question 4

Finally, the last set of analyses explore what happens to workers after they leave child care. For this analysis, we identify workers whose last observed quarter in child care was in 2014, 2018 or 2022 (*leaver sample*). This sample includes people of many different tenures, since some may have worked in child care for many years, whereas others may only have had one qualifying quarter of child care employment before leaving the industry.

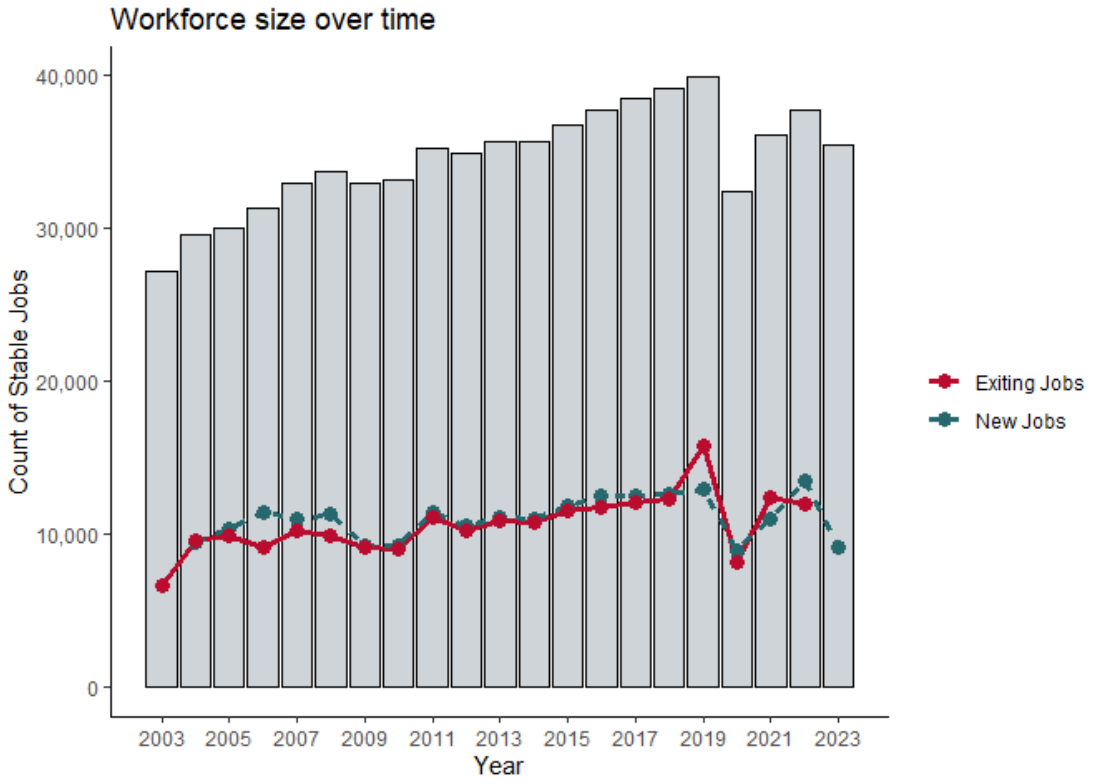
Similar to the child care entrant analysis, we look ahead four quarters to find the next stable employment job in the UI records. For some workers, we do not observe any subsequent jobs in the UI data in this four-quarter window. For others, we find their next stable job after leaving child care, and record its industry (*receiving industry*). For workers who simultaneously held multiple jobs after leaving child care, we record the industry of their most proximal job. Jobs the worker held while working in child care that continued after the end of the child care stint are considered the subsequent job. Finally, we use the first stable employment quarter in the new job and record the real, annualized earnings for the worker's receiving job, reporting the median earnings by receiving industry. We also report the median, annualized earnings in the last stable employment quarter in ECE as comparison.

FINDINGS

Research Question 1: How many child care jobs do we see in Ohio's UI data each year, how many employment relationships begin and end each year, and what are the median annual earnings of these jobs?

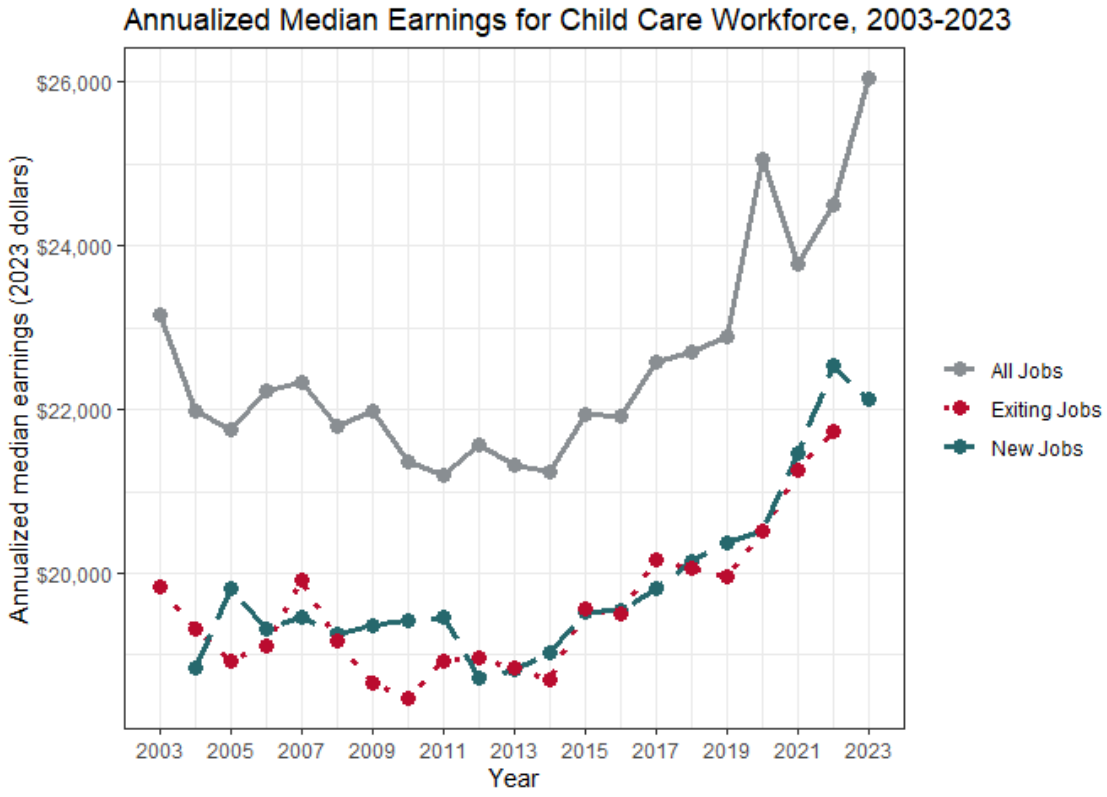
From 2003 to 2019, the total number of stable jobs in child care in Ohio grew steadily from a low of about 27,000 jobs in 2003 to a high of about 40,000 jobs in 2019. The number of child care jobs dropped precipitously in 2020 to 32,396, a 19 percent year-over-year reduction in the number of stable jobs. Figure 1 shows the total number of child care jobs in Ohio each year (grey bars), as well as the number of new jobs, and the number of exiting jobs (blue and red lines, respectively). New jobs captures new, stable employment relationship between an employer and employee, and exiting jobs includes the number of employer-employee relationships that end in each year; note that these counts do not include jobs that start and stop – for instance, someone laid off or on leave who later returns to the same employer. The figure shows that the 2020 drop in total stable jobs was driven both by an increase in job exits – people whose last stable employment quarter occurred in 2019–as well as lower job starts in 2020. Since the pandemic, the number of stable jobs rebounded to about 37,700 in 2022, before dropping again in 2023. **Total ECE jobs in Ohio in 2023 were about 35,400, about 11 percent lower than their 2019 high.**

Figure 1. Total number of stable child care jobs, new child care jobs, and exiting child care jobs per year, Ohio.



Median real earnings in child care jobs dropped from about $23,000 in 2003 to $21,000 in 2014, increasing again to about $23,000 in 2019. However, since 2019, median real child care earnings increased to a high of about $26,000 in 2023 (Figure 2). The growth in earnings since 2020 was driven by a sharp increase in earnings for new jobs, which approached the industry-wide median earnings in 2022. Exiting jobs paid about the same as new jobs. This may reflect the fact that our sample includes multiple roles in child care, everything from assistant teachers to program directors. Higher turnover rates among lower paid workers could reflect the patterns we uncover.

Figure 2. Annualized median wages of all child care jobs, new child care jobs, and exiting child care jobs in Ohio, 2003-2023 (2023 $).



Research Question 2: In which industries do individuals work before they start in child care? What did they earn before joining the child care sector?

Figure 3 shows the contributing industries for new entrants to the child care sector for three cohorts: those who join the child care sector in 2014, 2018, and 2022. The figure illustrates the share of each entering cohort who held stable employment in each industry prior to entering child care. We also show the share of each entering cohort that had no reported UI wages in any jobs in the four quarters before joining the ECE sector.

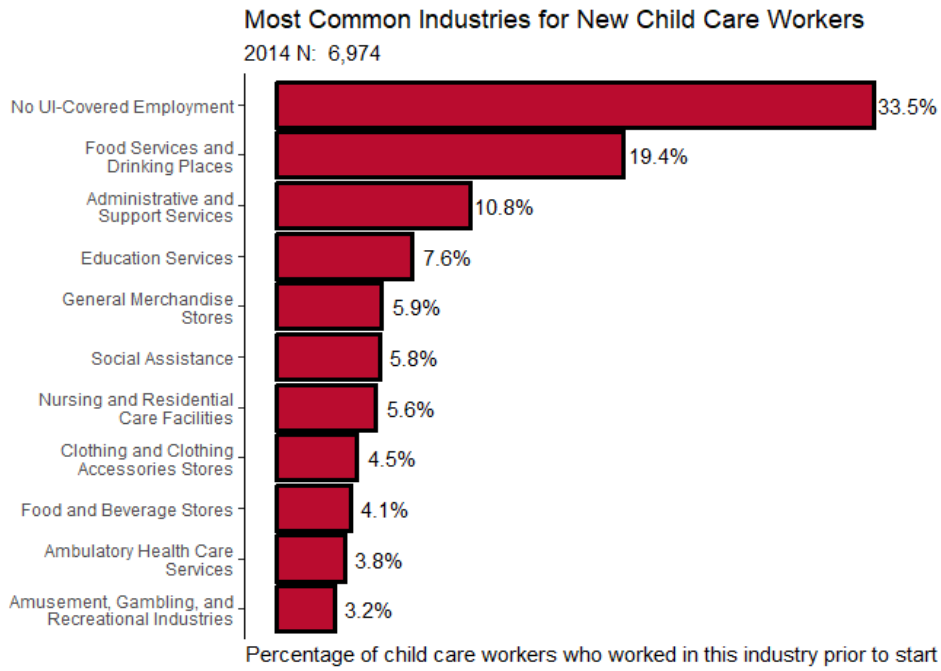
In each cohort, between 29 and 34 percent of child care industry entrants had no reported UI earnings in the four quarters prior to beginning their child care jobs. This is driven in part by the relatively young child care workforce, where new workers are less likely to have worked elsewhere before joining child care. Women of child-bearing age also dominate the field and tend to enter and exit the labor force to accommodate family needs. It may also reflect the fact that many new workers at wage-earning child care jobs previously worked in home-based child care or informal child care arrangements (i.e., baby-sitting or nannying) where they were not paid UI earnings.

Food service is the largest contributing industry across all three cohorts (about 20 percent), followed by the administrative support industry, which contributed about 10 percent of new child care employees for all three cohorts. Administrative support service industries include employers that offer office support and clerical help, facilities support like cleaning, as well as landscapers, security guards, or travel help.

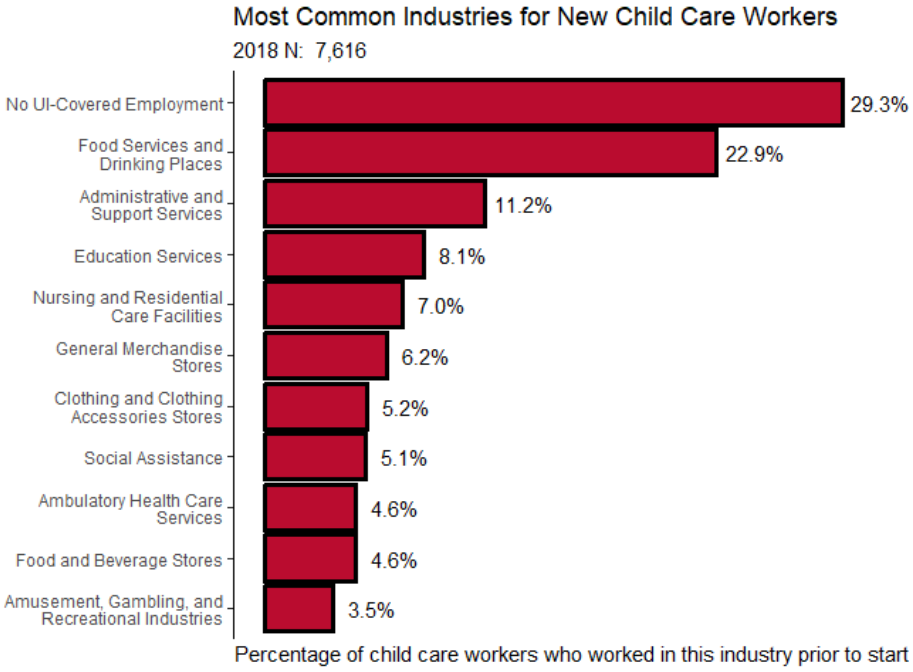
Finally, the education industry (i.e., elementary and secondary education), general merchandise and apparel retail industries, social assistance, as well as nursing and residential care, and ambulatory health care services each contributed between 5 and 10 percent of new workers. The relative importance of these industries varies minimally across entrant cohorts. The one visible trend is that health-related industries (i.e., nursing and residential care, and ambulatory health care services) become relatively more common contributing industries over time. For the 2014 entrants, about 9 percent of child care entrants came from a health-related industry, compared to about 12 percent for the 2022 entrant cohort.

Figure 3. Share of new child care workers by contributing industry, 2014, 2018 and 2022 entering cohorts.

Panel A: 2014 Entering Cohort



Panel B: 2018 Entering Cohort



Panel C: 2022 Entering Cohort

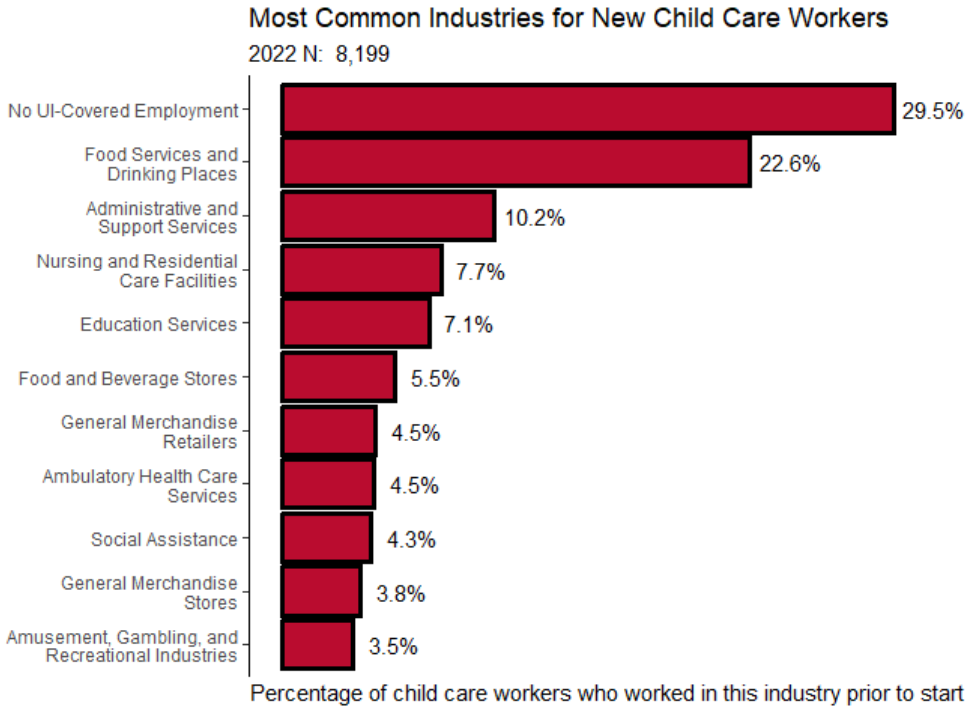


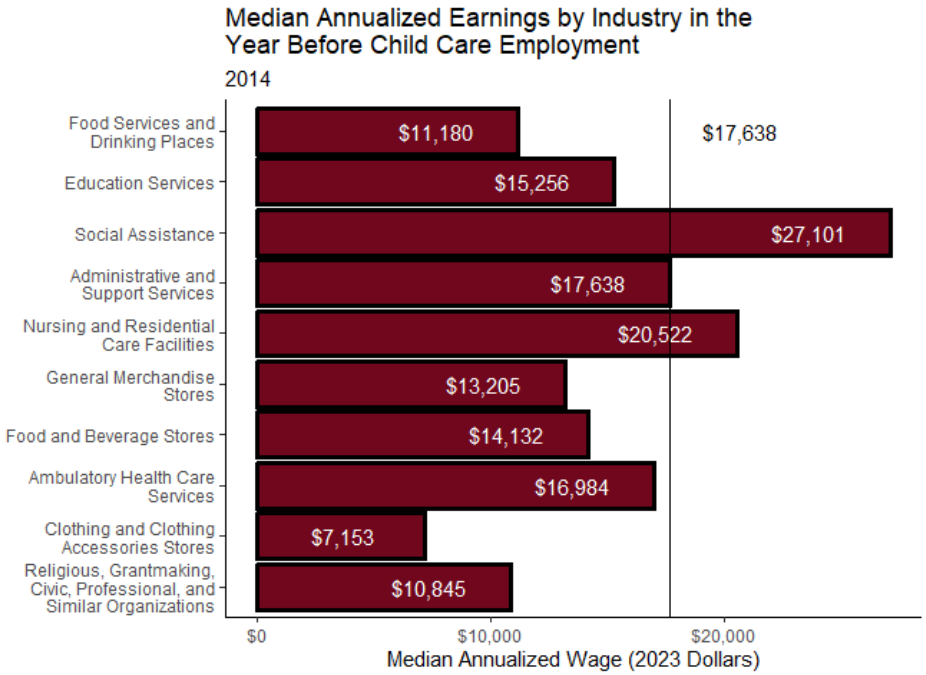
Figure 4. illustrates what new child care entrants earned in their previous jobs relative to their starting child care earnings. For each cohort and by each contributing industry, the figure shows the median earnings of workers who left the industry for child care, with industries ranked by their share of total new ECE jobs. Note that UI-covered wages do not include tips, which are likely relevant for jobs in food service. The vertical black line denotes the median earnings of new child care entrants in each cohort. One thing to keep in mind when interpreting these data is that they reflect differences in annual earnings, which can by driven either by differences in hourly wages, or by differences in the number of hours worked.

Across years, workers coming to child care from food service, food and beverage stores, or other retail sectors enjoyed a significant increase in earnings in their first child care job. Median UI-covered earnings in these new child care jobs was upward of 50 percent more than the service and retail jobs paid. By contrasts, workers joining child care from health-related industries like nursing and residential care, or from social assistance jobs, took a pay cut when they began their first child care job. Workers joining child care from these contributing industries earned up to 50 percent less in their new child care jobs.

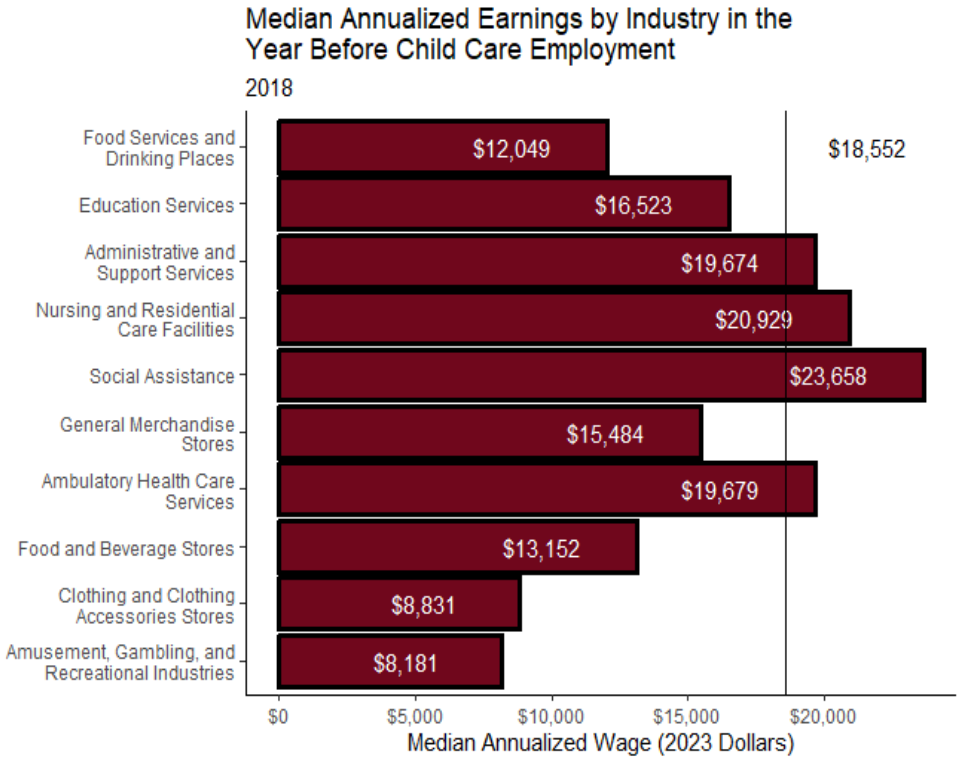
In general, the earnings differences between contributing jobs and new child care jobs are fairly stable over years, with the exception of jobs in K-12 education (Education Services): while workers joining child care from other education jobs in 2014 and 2018 earned about 15 percent less in their education jobs than in their new child care jobs, workers joining in 2022 earned slightly more in their education jobs than at their new child care positions.

Figure 4. Median annualized real earnings of new entrants to the child care industry, by contributing industry, 2014, 2018, and 2022 entering cohorts.

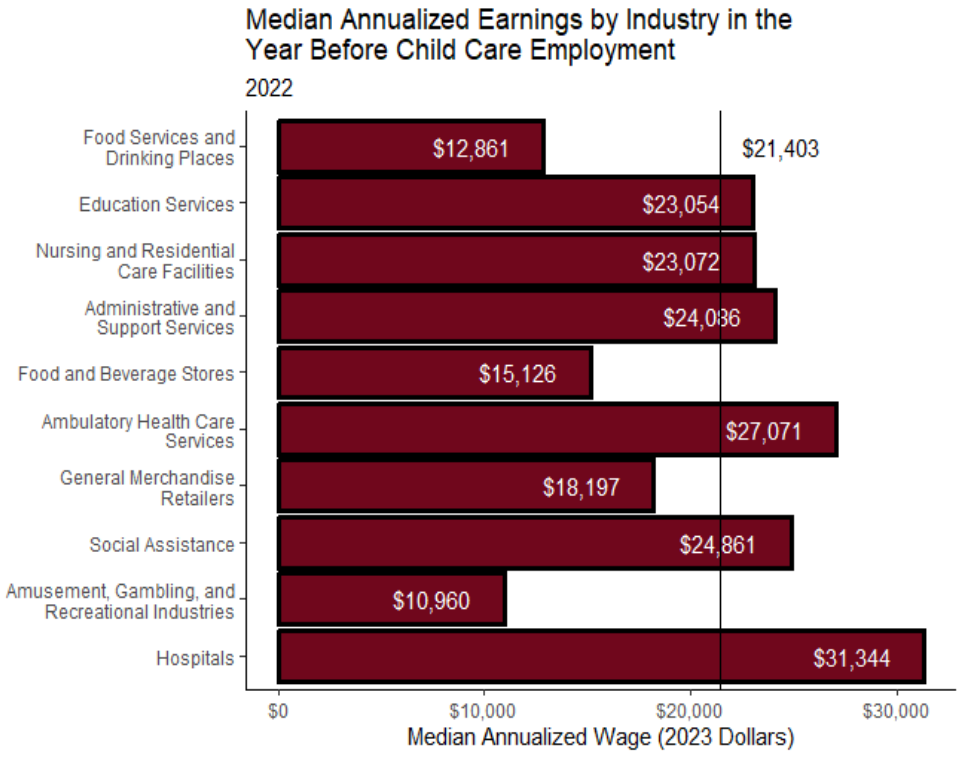
Panel A: 2014 Entering Cohort



Panel B: 2018 Entering Cohort



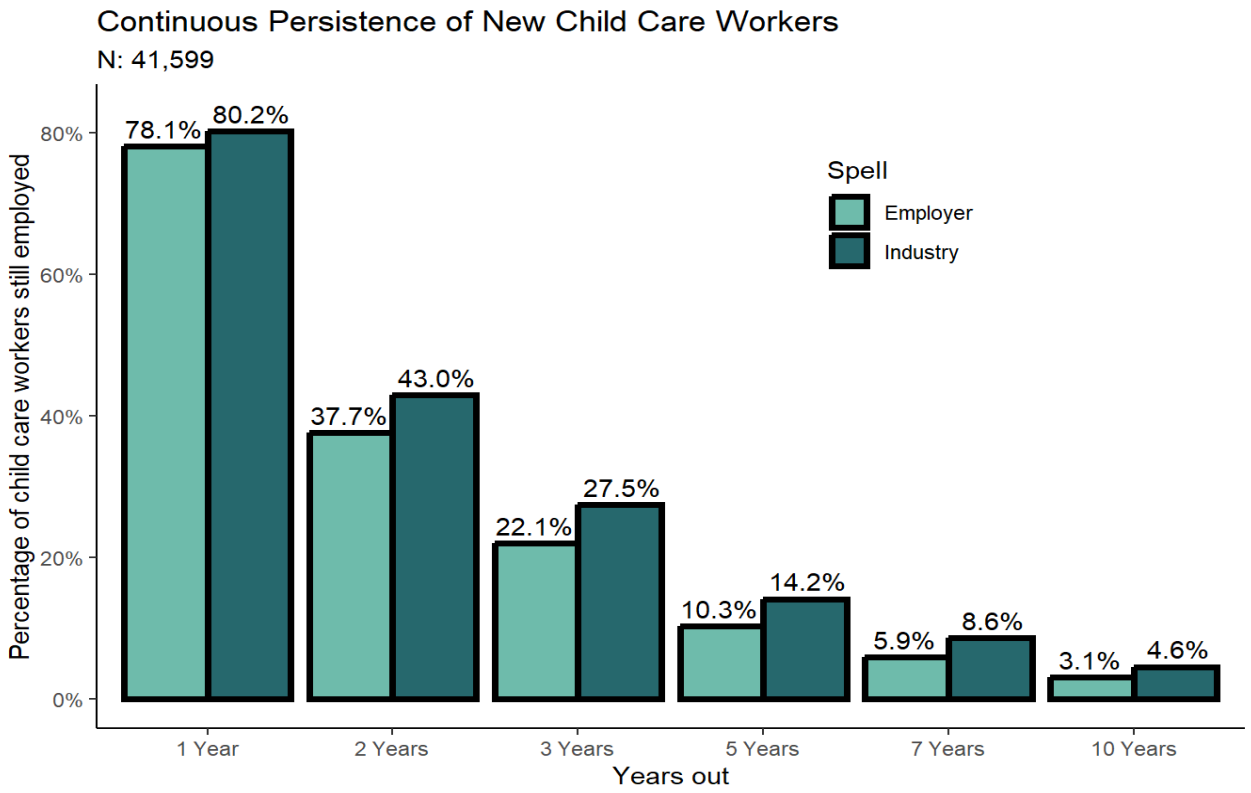
Panel C: 2022 Entering Cohort



Research Question 3: How long do new workers stay in the child care industry after they start? How long do new workers stay with the same employer in the child care industry after they start?

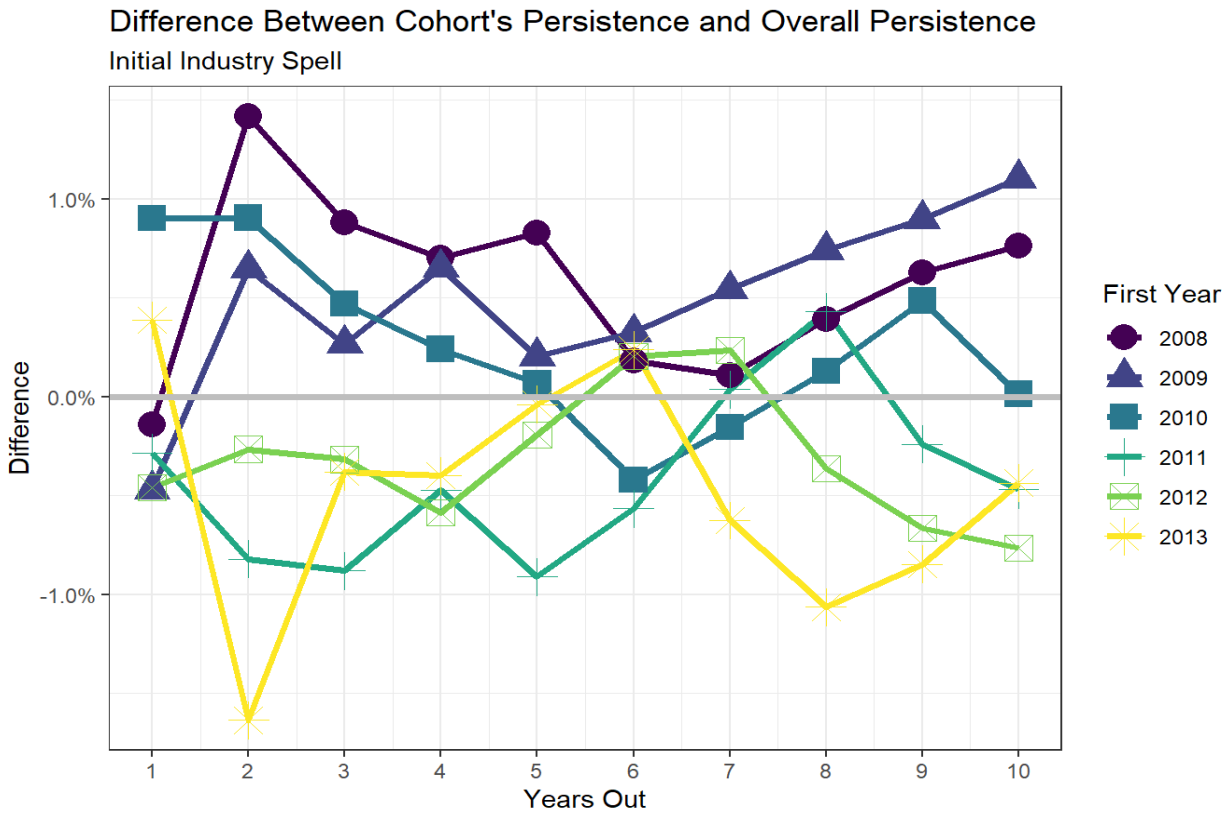
Over 50 percent of child care workers in Ohio remain in a job, and in the industry, for less than 2 years (Figure 5). Among workers who joined the child care industry between 2008 and 2013, 80 percent were still in the industry, and 78 percent were still with the same employer, after 1 year. However, between 1 and 2 years of employment, a large share of workers have changed jobs or left the industry. By 3 years out, only 22 percent of workers are still with the same employer, and less than 5 percent work in the same job for 10 years.

Figure 5. Percentage of new child care workers who are still in the industry, and still with the same employer, by number of years after job start, 2008-2013 entrants.



Persistence in the child care industry has decreased slightly over time. Figure 6 shows the difference between each entrant cohort's persistence rates and the average persistence over all cohorts, by year. The lines representing the 2008 to 2010 entrant cohorts are all above the 0-axis, indicating higher rates of persistence at each industry spell length; the lines for the 2011 to 2013 cohorts are all below the 0-axis. However, the differences are not large: for instance, the difference between the two-year industry persistence rate between the 2008 and 2013 cohorts is about 3 to 7 percent.

Figure 6. Difference between each entrant cohort's child care industry persistence and overall persistence, 2008-2013 entrants.

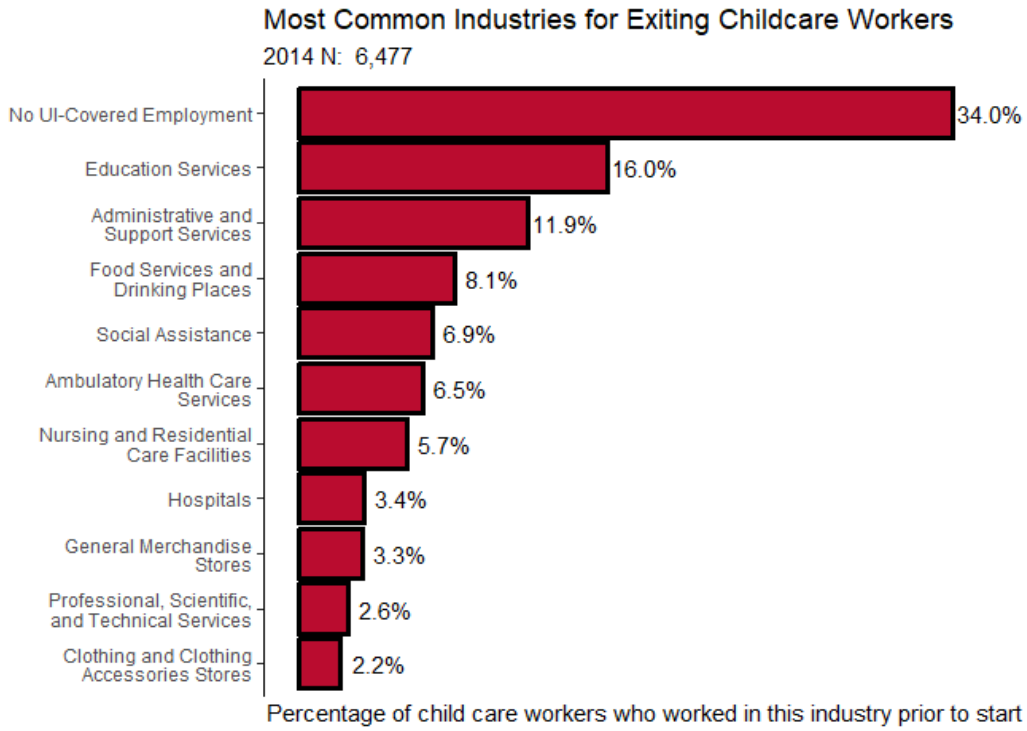


Research Question 4: What industries do former child care workers transition to after leaving the child care industry? How do their wages in these industries compare to their wages before leaving child care?

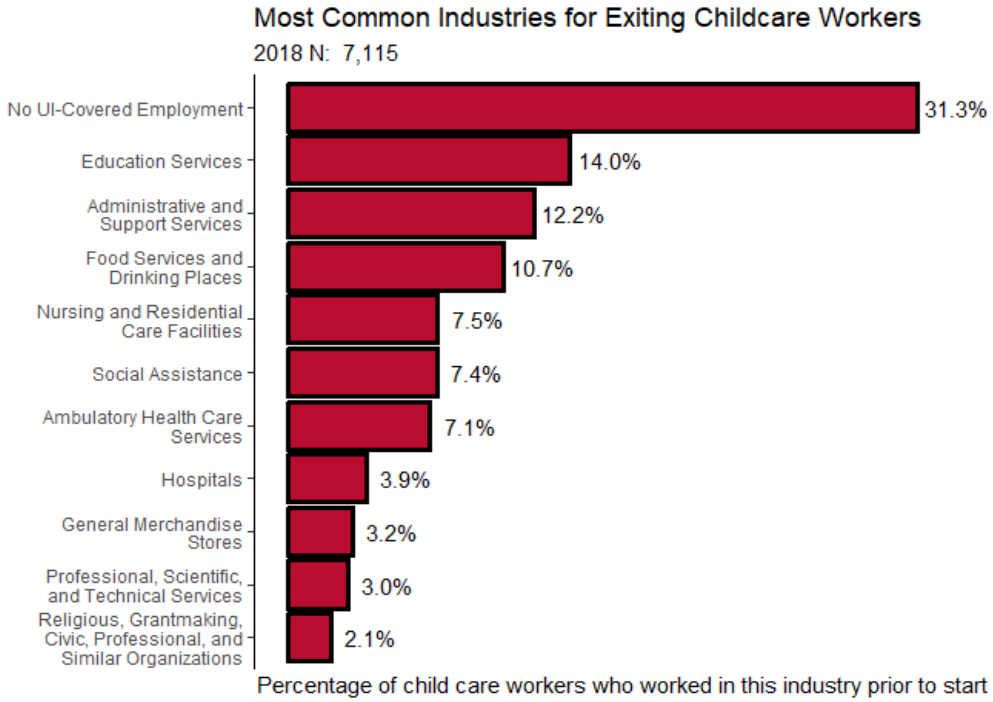
Most workers that leave the child care industry in Ohio do not go on to work at a UI-covered job in next four quarters. Figure 7 shows that for all three cohorts of workers who left ECE, between 29 and 35 percent of child care leavers do not have another UI job in the next four quarters. This may reflect transitions from child care centers to home-based child care or nanny positions that do not appear in the UI data. It may also reflect the fact that many child care workers are women who may leave the industry to care for their own children. **The share of workers with no UI-covered employment after their ECE stint is shrinking over cohorts, from 34 percent (2014 leavers) to 29 percent (2022 leavers).**

Figure 7. Share of workers leaving child care by receiving industry, child care leaver cohorts, 2014, 2018, and 2022.

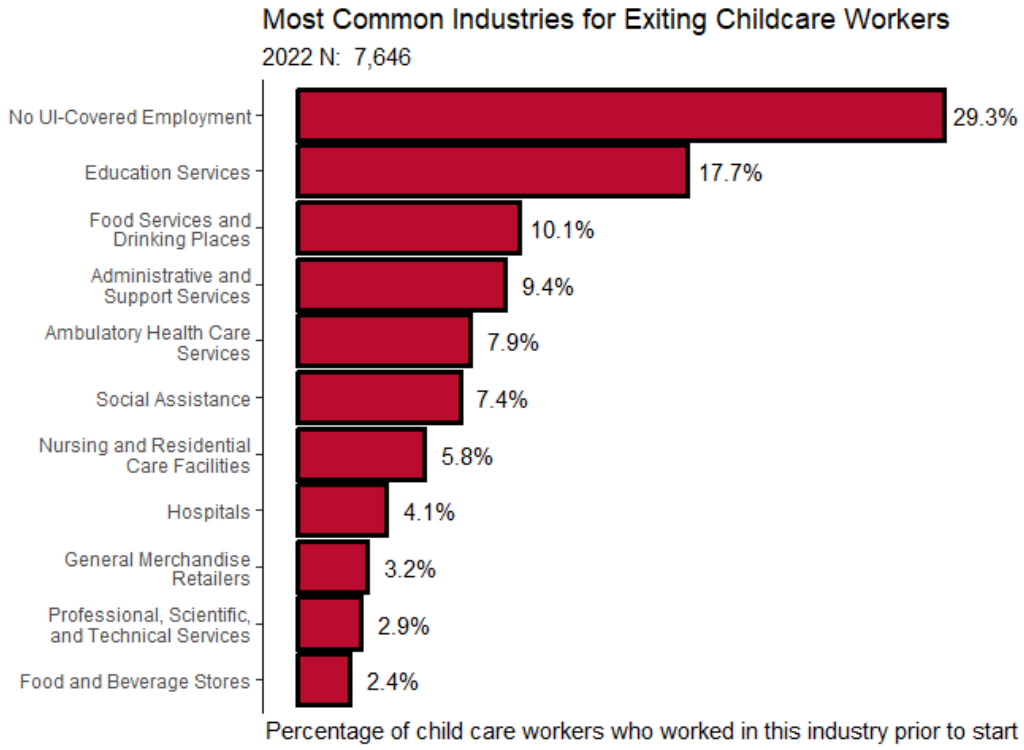
Panel A: 2014 Leaver Cohort



Panel B: 2018 Leaver Cohort



Panel C: 2022 Leaver Cohort

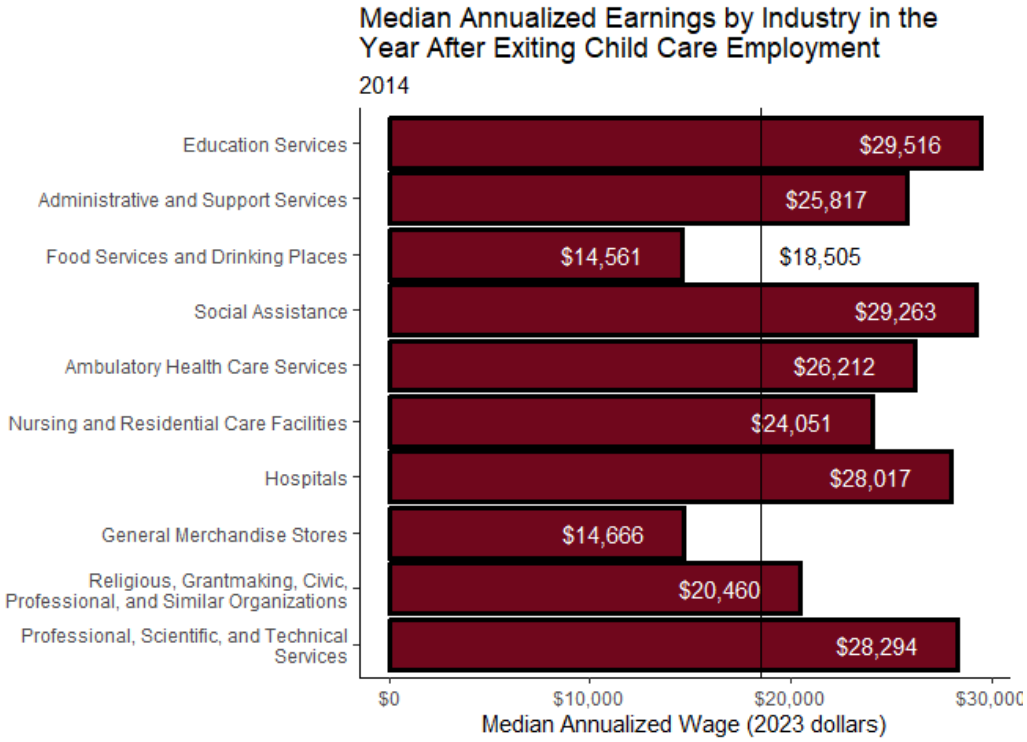


A significant share of workers who leave child care in Ohio go to jobs in the K-12 Education Services sector. Between 14 and 18 percent of child care leavers go to K-12 education. Administrative services and food service are also common receiving industries for those who leave child care, with about 10 percent of child care leavers moving onto jobs in each of these industries. Many (about 17 percent overall) also leave for jobs in health-related industries like nursing and long-term care. About 7 percent go to jobs in social assistance industries, which includes family services and care-giving, food and housing assistance, and other helping industries. Very few leavers return to jobs in retail.

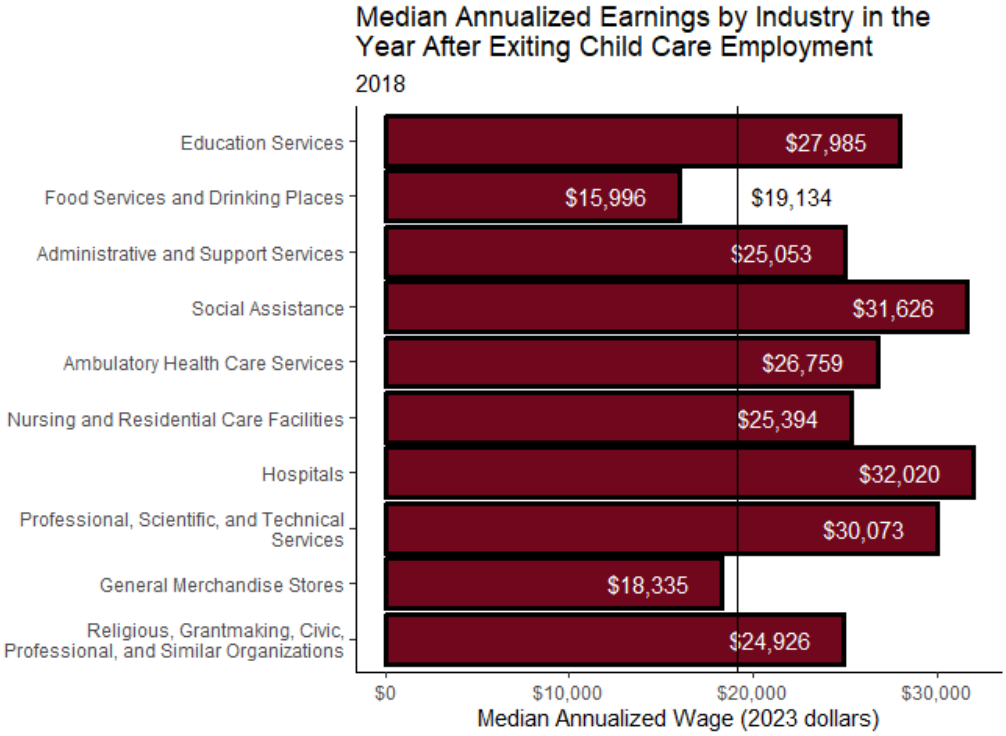
The majority of those who leave the child care industry for another wage-earning job earn more in their new job than they did in child care. Those who leave child care to work in K-12 education earn substantially more in their new industry. However, the earnings premium in K-12 relative to child care has declined over time as child care wages have grown: those who left child care in 2014 earned about 60 percent more in their K-12 job than their child care job; those who left in 2022 earned only 29 percent more. By contrast, the earnings of new jobs in hospitals and in social assistance have also grown over time, meaning that the earnings premia in these industries relative to child care has remained fairly constant over time. In 2022, workers who left child care for jobs in these industries earned more than other child care leavers. Finally, those who left child care for jobs in food service earned about 20 percent less in food service, excluding any tips. Food service jobs may also offer other benefits like flexibility that child care does not.

Figure 8. Median annualized real earnings of child care leavers, by receiving industry, 2014, 2018, and 2022 leaving cohorts.

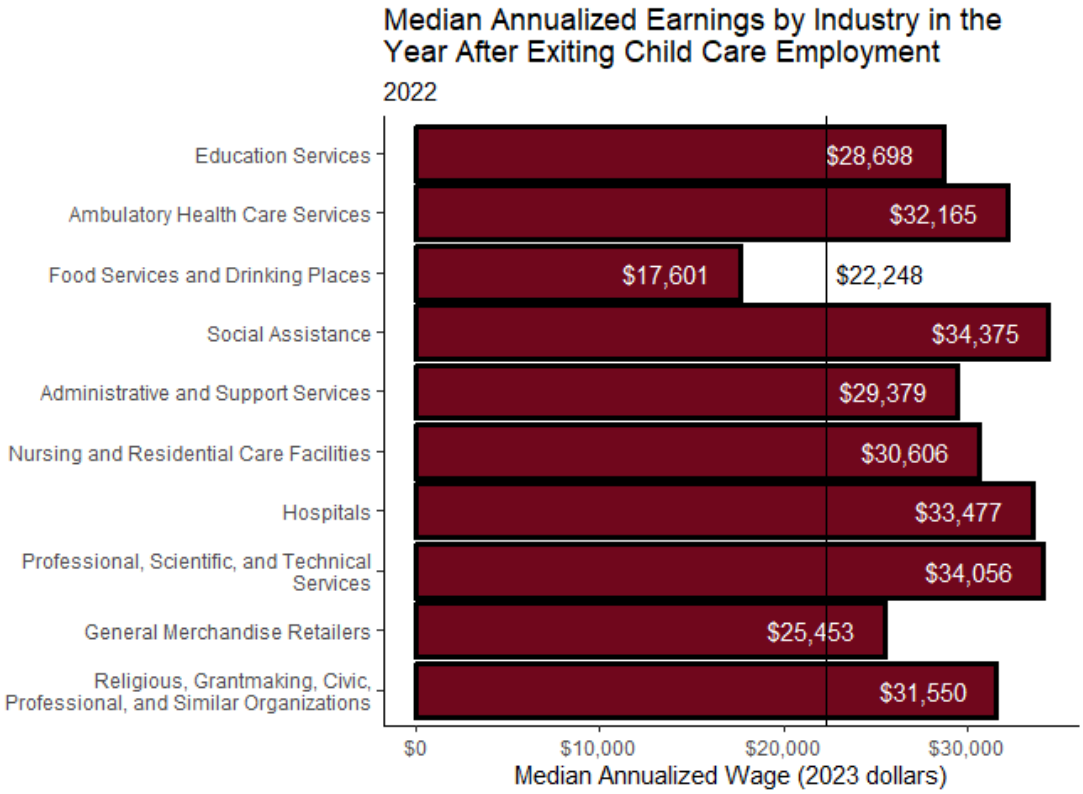
Panel A: 2014 Leaver Cohort



Panel B: 2018 Leaver Cohort



Panel C: 2022 Leaver Cohort



CONCLUSION AND IMPLICATIONS

The analyses described in this report use Ohio's UI and QCEW data to document trends over time and cohorts in Ohio's ECE workforce. The data and analyses are unique in that they allow researchers to track workers over many years – from 2003 to 2023 in our case – documenting the longitudinal trajectories of people who work in the ECE industry. The data allow new insights on industry and employer retention and turnover, wage evolution, and movement in and out of the ECE sector to and from other industries. These insights can help state decision-makers introduce policies to help stabilize the ECE workforce, ultimately supporting small businesses, working parents, and children in the state.

The results in this report show that while the ECE sector has grown over years, the devastating impact of the pandemic has not been fully resolved, leaving total ECE employment in 2023 10 percent below its 2019 high. By contrast, the effect of the tight job-market and missing child care workforce translated into significant increases in earnings for new child care sector employees since 2020. Despite this, ECE remains a low-paying job, with the median annualized earnings across workers in the sector hovering around $26,000 in 2023. These low wages are likely related to the relatively low levels of persistence in the ECE industry.

Those who join the ECE industry tend to come from other low-paying sectors, like food service, retail, administrative support services, health-related industries, and K-12 education. Many who leave ECE return to these same industries, although they do not go back to retail jobs. Workers entering and exiting the ECE sector tend to increase their annual earning with each career transition: most ECE entrants earned more in ECE than in their previous jobs, and ECE leavers earned more in their next, non-ECE job. This suggests that while there is a revolving door between ECE and other low-paying industries, there is also a trajectory of upward earning growth among those who enter and leave the industry. ECE workers may use ECE as a stepping stone to better paying occupations in other competing industries. Finally, while median annual earnings in receiving jobs was generally higher than in ECE, the differences were not large in absolute terms: for instance, the median annual earnings of those who left for K-12 education was about $6,000 more in K-12 than in ECE. This offers the opportunity for policies to address ECE workforce instability. For instance, Colorado recently implemented a state income tax credit for child care workers of up to $1,700 in 2024. Such a policy is likely to have an impact on retention. Child care providers can also use this earning differential as a starting point to increase retention. For example, a child care provider who wanted to increase a teacher's annual earnings by $6,000 would need to increase infant tuition rates by about $100 per month, excluding any additional benefit cost.

Opportunities for Future Work

The analyses in this report demonstrate the power of the state's UI and QCEW data to explore child care workforce research questions. Using just the UI and QCEW data, there are many more questions that could be answered. The analyses described in this report could be extended to illustrate differences across employer size or region. The data could also be used to evaluate the effectiveness

of any child care or workforce policies on worker earnings, recruitment, and retention. Finally, there is the potential to link the UI records to the state's child care workforce registry data. This would allow research that differentiates teachers from other child care employees, as well as offering the ability to understand how different credentials are rewarded in the industry. In short, the state's UI records offer an untapped resource to help support the child care industry, and families.

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The Ohio Longitudinal Data Archive is a project of the Ohio Education Research Center (oerc.osu.edu) and provides researchers with centralized access to administrative data. The OLDA is managed by The Ohio State University's CHRR (chrr.osu.edu) in collaboration with Ohio's state workforce and education agencies (olda.ohio.gov), with those agencies providing oversight and funding. Learn more about our sponsors in the OLDA Acknowledgment section.

METHODOLOGICAL APPENDIX

Identifying child care employers

The QCEW data has a unique classification system for employers. Each employer has a unique identifier (employer ID) in our data that allow us to link the employer-level information–including industry–to each employee's UI records. However, among employers, we observe single-establishment employers–businesses with just one physical location–as well as multi-establishment employers. Multi-establishment employers appear in the data under a single employer ID, but may have subunits in different geographic locations, and even in different industries. For example, take the case of a large corporation that owns several firms that operate in different industries: this firm could appear in our data with one employer ID, but with multiple subunits, each operating in a different industry.

Even a smaller firm that operates multiple physical establishments in the same industry, as well as a headquarters, could appear as a single employer ID with most of its subunits in its relevant industry, but one subunit in the "business services" industry. A good example of this type of employer in our data would be a large child care chain with locations across the state and local headquarters. While single-establishment employers are a simpler case, even they present complications since they can change into a multiunit employers or even change industry codes during our study period.

Because we are unable to identify subunits in the UI wage data–we can only identify these larger firms/enterprises by their unique employer ID–the identification of "Child Care Employers" is complicated. To identify child care employers, we made the following analytical decisions:

- Single-Establishment Employers must be in childcare for the majority of quarters they are active.
- Multi-Establishment Employers must have the majority of their employment be in childcare, using the third month of each quarter to identify employment levels. If their industry changes over time, it must be in childcare for the majority of quarters they are active.
- If they are a single establishment but later expand, they must be in childcare most of the time in both "eras" of their business.

These rules leave us with a sample of 4,739 employers active in Ohio between 2003 and 2023. Given there are about 4,200 licensed centers in Ohio in 2025, this suggests that there is significant persistence in child care employer licenses. It also suggests that we are likely under-counting the number of employers to some extent. However, with this definition of child are employers, we retain approximately 35,000 employee-employer pairs per quarter, which matches the BLS counts of the number of child care workers per year. Future research using UI records to track child care workers should address the question of how best to identify employers in the UI data.

Identifying Child Care Employees and Stints

The original data pull was based on the employees who had any association with the child care employers for any amount of time between 2003 and 2023. However, this sample includes people who worked in child care for any amount of time–even for just a few weeks. The data also include quarterly records for all stints in child care, even if they were just a few weeks long. This set of employment experiences does not necessarily align with conceptual definitions of child care workers or child care employment stints.

To focus our sample, and our definition of job stints, we use the following definition of stable employment, which matches the definition used by the US Census Bureau in its Quarterly Workforce Indicators reports, and also the definition used in Illinois (US Census 2019; Wiegand, McQuown, and Goerge, 2023; Wiegand, Goerge, Kang, et al., 2024). Referring to table X below, quarter t is a stable employment quarter if we observe work with the same employer in the previous (t-1) and subsequent quarters (t+1). So, for example, person A in the table has earnings reported for the same employer in quarters t-1 through t+3. Quarters t, t+1 and t+2 would constitute qualifying employment. Person B only has earnings in quarters t-1 through t+1; we would only count t as a qualifying employment quarter. Since neither C nor D has 3 consecutive quarters of earnings with the same employer, we would not count any qualifying quarters for these workers.

Table X. Example of stable employment

	t-2	t-1	t	t+1	t+2	t+3	t+4
A	X	$	$	$	$	$	X
B	X	$	$	$	X	X	X
C	X	$	$	X	X	X	X
D	X	X	$	$	X		

We use the definition of qualifying employment to focus our sample. To be included in our sample, or in any of our analytical cohorts, a worker must have at least one qualifying employment quarter in child care in the relevant years. For our full sample analysis, this means we include workers that have at least one quarter of qualifying employment with a child care employer during 2003 and 2023. For our cohort-based analyses on entrant and leavers, we focus on workers whose first or last quarter of employment in child care occurred in the relevant year but confirm the previous quarter was qualifying.