



The impact of COVID-19 on the U.S. child care market: Evidence from stay-at-home orders

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ABSTRACT

Stay-at-home orders (SAHOs) were implemented in most U.S. states to mitigate the spread of COVID-19. This paper quantifies the impact of these containment policies on a measure of the supply of child care. The supply of such services may be particularly vulnerable to a SAHO-type policy shock, given that many providers are liquidity-constrained. Using plausibly exogenous variation from the staggered adoption of SAHOs across states, we find that online job postings for early care and education teachers declined by 16% after enactment. This effect is driven exclusively by private-sector services. Indeed, hiring by public programs like Head Start and pre-kindergarten has not been influenced by SAHOs. We also find that ECE job postings increased dramatically after SAHOs were lifted, although the number of such postings remains 4% lower than that during the pre-pandemic period. There is little evidence that child care search behavior among households was altered by SAHOs. Because forced supply-side changes appear to be at play, our results suggest that households may not be well-equipped to insure against the rapid transition to the production of child care. We discuss the implications of these results for child development and parental employment decisions.

1. Introduction

In an effort to mitigate the spread of COVID-19, most U.S. states enacted “stay-at-home” orders (SAHOs) throughout the spring of 2020. Many observers argued that such policies were likely to have large and potentially permanent negative consequences for the supply of child care. Indeed, given that child care businesses generate most of their revenue from parent fees, it is not surprising that 17% of providers in a March survey reported they would not survive a closure of any length, and an additional 30% said they would not survive a closure of more than two weeks (NAEYC, 2020). Evidence of large-scale program closures is abundant. For example, 60% of parents in a late-March survey reported that their child care program had closed (Bipartisan Policy Center, 2020). Furthermore, administrative data from Florida reveal that 57% percent of providers were temporarily shuttered, while 35% of

Louisiana’s programs were expected to close permanently (Bryson, 2020; Sonnier-Netto, Cope, Falgoust, Oakey-Frost & Lewis, 2020). Given that 32% of workers have at least one child under age 14, these supply constraints are predicted to stifle the recovery of the U.S. economy by limiting parents’ ability to reenter the labor force (Dingel, Patterson & Vavra, 2020).

These developments, together with the large literature showing the importance of early childhood education to later schooling and labor market outcomes, highlight the need for systematic evidence on how COVID-19 is influencing the child care market (Cunha, Heckman & Schennach, 2010; Havnes & Mogstad, 2011; Herbst, 2017; Ludwig & Miller, 2007). Thus the goal of the current paper is to begin to understand this question by studying whether the enactment and subsequent removal of SAHOs has altered the supply of child care.

There are at least two mechanisms through which the

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pandemic—and the resulting SAHOs—may influence child care supply. First, there could be a direct effect on labor demand arising from the mandatory closure of child care services for public health reasons associated with the national containment strategy.¹ Second, there may be an indirect effect in parent demand for child care, measured using search behavior. Given that most states issued a SAHO (as well as mandatory business closure orders), working parents were compelled to remain at home (Brynolfsson et al., 2020). In addition, the pandemic may change parent preferences for child care. The rapidly spreading virus could alter the health and safety perceptions of out-of-home child care settings, in which large groups of children interact in close proximity. If a child's perceived risk of contracting the virus is sufficiently high, parents may elect to shift the locus of caregiving from out-of-home services to in-home parent care so that the environment can be closely monitored. Disentangling these channels is important for understanding the welfare effects of the pandemic on parents: if the labor demand channel is operational, then parents may be unable to self-insure against the shock; otherwise the changes simply reflect evolving demand.

This paper provides the first quantitative evaluation of the impact of pandemic-related containment policy on the supply of child care in the U.S. Our proxy for supply is based on unusually rich proprietary data on the number of online job postings for early care and education (ECE) teachers. We construct a state-by-day panel of ECE job postings over the period January 1 to June 30, 2020. Our identification strategy exploits plausibly exogenous variation in the staggered adoption of state-level SAHOs to estimate their causal effect on ECE supply. SAHOs are important policies because they are enforceable by law (Pearl, Hunter, Lo & Chung, 2020); they have been shown to limit public gatherings while increasing the proportion of people remaining at home (Abouk & Heydari, 2020; Brzezinski, Kecht, Van Dijke & Wright, 2020); and they have substantially slowed the spread of COVID-19 (Dave, Friedson, Matsuzawa & Sabia, 2020). The nation's first SAHO was enacted in California on March 19, 2020; approximately four weeks later, 40 states and the District of Columbia had also issued one. As of June 30, the median SAHO lasted 52 days, although there is substantial variation in SAHO-length, ranging from 24 (Mississippi) to 104 (California) days.² We exploit this state-by-day variation using a difference-in-differences (DD) design along with an event study analysis to examine SAHO-driven changes in ECE supply.

Importantly, we also examine how the subsequent expiration of SAHOs influences ECE hiring. Governors in all but three states (California, Hawaii, and New Mexico) allowed the SAHO to lapse, paving the way for businesses to reopen. Given that our dataset extends to June 30, we are able to incorporate between 11 (Oregon) and 67 (Alaska) days of post-SAHO job postings into our analysis. Thus this study is able to examine the full impact of SAHO enactment on ECE hiring, as well as provide short-run evidence on whether the ECE labor market began to rebound after the elimination of SAHOs.

Our analysis provides two key results. First, we show that enactment of a SAHO reduced the number of ECE job postings by over 16% *per day*—implying a reduction in labor demand. This estimate remains robust after controlling for an assortment of state policies and time-varying shocks. The reduction in overall labor demand is driven by preschool-age teacher positions as well as providers in the private-sector. Indeed, SAHOs do not appear to influence hiring behavior in

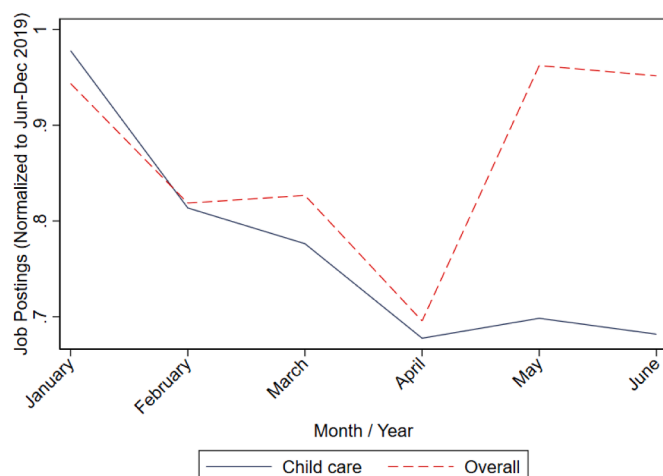


Fig. 1. Time series variation in normalized early care and education and overall job postings, January 2020 to June 2020

Notes.—Source: Emsi. The figure plots the normalized monthly number of on-line job postings in early care and education (ECE) occupations (SOC 25–2011, 25–2012, 25–2021, 25–2052), as well as total number of job postings, between January 2020 and June 2020 (normalized to the average from June to December 2019).

the market for Head Start and pre-kindergarten teachers. Second, we find that ECE job postings increased dramatically after the SAHO was lifted, although the number of such postings remains 4% lower than that during the pre-pandemic period. To put our results into perspective, ECE job postings declined by roughly 30% relative to the pre-pandemic trend between June and December 2019, so we interpret the SAHO elasticity as economically meaningful. In addition, back-of-the-envelope calculations imply that as many as 1200 fewer teachers are hired—resulting in the ability to care for 12,000 fewer children—every month that a SAHO is in effect.

Although Kahn, Lange and Wiczer (2020) document a secular decline in labor demand, we provide two pieces of evidence that the ECE sector has been uniquely affected by the pandemic. First, Fig. 1 shows that the number of ECE job postings has fallen much faster over the past few months than those in all other sectors. Second, we provide regression-based evidence that the impact of SAHOs on ECE hiring is 16 times larger than their impact on education hiring broadly. Indeed, our results show that SAHOs had virtually no effect on the larger education market. While there may exist general equilibrium considerations, we provide a static, reduced-form, and early approximation of the impact of SAHOs on the ECE market.³ Indeed, there are numerous avenues for future work on this topic, including whether these policies (and their subsequent loosening) are associated with long-run changes in the structure of the market, parent preferences for ECE, and child development.

At the broadest level, our paper contributes to a large literature on early childhood development and the allocation of time towards child care and home production activities. Dating back to at least Becker (1965), child care has been viewed as a form of household production with a degree of substitutability with market activities (Rogerson, 2007). However, parents value time allocated to child care, especially in

¹ In several states the mandatory closure of child care businesses is explicit. Indeed, businesses in 12 states were ordered to close as per governors' executive action (Hunt Institute, 2020). In other states child care providers were not deemed "essential" or were given the option to close. Anecdotal evidence suggests that many have exercised this option, electing to furlough or layoff their employees.

² As of June 30, three states (California, Hawaii, and New Mexico) were still operating under a SAHO. For completeness, these states were included in the median SAHO length reported in the text.

³ We have experimented with several diagnostic exercises to gauge the role of general equilibrium effects. Our main concern is that changes in job postings may reflect a collapse in the demand for child care. To investigate this possibility, we consider fixed effects regressions relating search activity for child care and job postings for early care and education, but we find no statistically or economically meaningful relationship. This is consistent with, although not fully causal evidence of, our interpretation that the costs of these SAHOs may have been borne by households with children who need care and supervision.

comparison with other home production activities (Juster, 1985; Robinson & Godbey, 1990; Krueger, Kahneman, Schkade, Schwarz & Stone, 2009). Moreover, the time allocated to child care is increasing in parents' wage rate and educational attainment (Guryan, Hurst & Kearney, 2008). Although the degree of substitutability between market- and home-based care varies based on its quality, there is a general recognition that investments in child development at early ages are particularly important because of the presence of "dynamic complementarities" (Cunha & Heckman, 2006; 2007). If the pandemic decreased the use of market-based child care more by force than by choice, it raises concerns that families may not be fully prepared to transition to home production quickly (or effectively) enough to avoid disruptions to the child development process. This could generate scarring effects on children, much like growing up (Giuliano & Spilimbergo, 2013; McGuire & Makridis, 2020) or graduating (Kahn, 2010; Oreopoulos, von Wachter & Heisz, 2012) during a recession. Given that 13 million (or 60%) of preschool-aged children were regularly attending some form of non-parental child care prior to COVID-19, the scale of the child development effects may be large (Corcoran & Steinley, 2019). Thus, our results will guide future work in the economics of education and labor well after the pandemic ends since they pinpoint the geographies, cohorts of children, and women who have been most adversely affected during the disruption over the pandemic.

Our paper also contributes to the policy discussion on the role of family leave and child care policies in parental employment decisions. Although the U.S. has witnessed large increases in the share of employed mothers—thereby fueling the demand for parental leave and subsidized child care—there are persistent gaps in the coverage and generosity of such benefits (Herbst, 2018). For example, the federal Family and Medical Leave Act (FMLA) provides only 12 weeks of *unpaid* leave and covers only 60% of private sector workers (Rossin-Slater & Uniat, 2019). In addition, just six states and the District of Columbia have enacted *paid* leave programs (Bana, Bedard & Rossin-Slater, 2019; Bartel, Rossin-Slater, Ruhm, Stearns & Waldfogel, 2018), and there is considerable variation at firm-level in the availability and quality of these benefits.⁴ As for child care, the largest subsidy programs—the Child Care and Development Fund (CCDF) and Head Start—are means-tested (both), contain strict work requirements (CCDF), or do not operate full-day, year-round programs (Head Start) (Herbst & Tekin, 2016). These constraints imply that such policies may be of limited value to many families for employment purposes. As a result, families either pay for child care services out-of-pocket or shift into unpaid, informal caregiving arrangements (Herbst, 2018). This discussion suggests that, given the limitations of in-work family supports, coupled with the liquidity boost from the CARES Act, the recent transition to home-based employment may be beneficial to some parents, particularly those who have stronger preferences for spending time with their children, who face greater consequences from taking time off work, or who are highly sensitive to the price of child care.

2. Data sources and measurement

Data for this paper come from several sources. We analyze the labor demand for child care using the universe of online early care and education (ECE) job postings obtained from the labor market analytics

company EMSI.⁵ Their job posting data are advantageous because it combines information from multiple external sources, including Indeed and CareerBuilder, among many others.⁶ Our dataset includes all job postings pertaining to the two-digit standard occupational classification (SOC) code for education (SOC-25). We then utilized a variety of keyword search methods to locate postings in three key sectors of the center-based ECE market: child care, Head Start (and Early Head Start), and pre-kindergarten. Although we were careful to limit the data to pedagogical (i.e., teaching) positions within each sector, we analyze the full spectrum of such positions, including lead and assistant teachers, teacher's aides, co-teachers, and floating classroom teachers. These positions were advertised by local and state government agencies, for- and non-profit centers (including national chains), places of worship, community-based organizations, and school-based before- and after-school programs. We further categorized the job postings according to the child-age of the classroom in which the teacher would operate: infant, toddler, or preschool classrooms, as well as before- and after-school settings. These data were collapsed into state-by-day cells, giving us the number of ECE job postings over the period January 1 to June 30, 2020.

We also collect information on the enactment and subsequent expiration dates of several state-specific COVID-19 containment policies, importantly those for statewide SAHOs. The SAHO data were collected from multiple sources, including Dave et al. (2020), Mervosh, Lee, Gamino and Popovich (2020), National Governors Association (NGA), and the COVID-19 State Policy Database (Raifman et al., 2020). Appendix Table A1 lists the enactment and expiration dates of the statewide SAHOs studied in this paper. In addition, we collect information on the enactment and (where relevant) expiration dates for a variety of other state policies that, if left unaccounted for, may confound the estimated effect of SAHOs, including state of emergency declarations, mandatory school and non-essential business closures, and face mask requirements. These policies were collected from the NGA, Hunt Institute, and Raifman et al. (2020).⁷ Finally, we investigate whether the decline in job postings might reflect changes in household tastes and habits over the course of the pandemic. For example, families may have begun caring for their children in new ways, thereby leading to a lower demand for child care supplied through the market. If so, we would see a

⁵ While job posting data is not the same as actual hiring data, we have found a close correspondence between the growth rate of job postings in the Emsi data and of hiring in the Job Openings and Labor Turnover Survey (JOLTS) data from the Bureau of Labor Statistics. We also show in Appendix Figure 1 that there is a 0.91 correlation between job postings and employment for the first six months of 2020.

⁶ To our knowledge, these data have not been used previously, although they are comparable to those from Burning Glass Technology, which have been used in some recent papers (e.g., Hershbein & Kahn, 2018). Appendix Figure 1 compares the logged total number of job postings from Emsi with the logged number of employed workers from the Current Population Survey between January and June 2020. We find a correlation of 0.91 between the two series, suggesting that online job postings is a valid proxy for the supply of workers.

⁷ The NGA data can be found here: <https://www.nga.org/coronavirus/>. The Hunt Institute data can be found here: <http://www.hunt-institute.org/covid-19-resources/k-12-state-specific-resources/>. In some models, we control for the number of COVID-19 cases by day and state. Such data were extracted from the *New York Times* Coronavirus (Covid-19) Data in the United States Database. This database provides information on the cumulative number of cases and deaths by state (and county) and day, starting on January 21. A confirmed case is defined as a patient who tests positive for COVID-19 and is reported as such by a federal, state, or local government agency.

⁸ It is important to note that, in a few states, the stay-at-home order took effect at 11:59pm. Our coding establishes the following day as the first day of implementation.

⁴ For example, Liu et al. (2019) use data from Glassdoor to show that firms offer higher quality maternity leave benefits in labor markets that contain fewer skilled female workers.

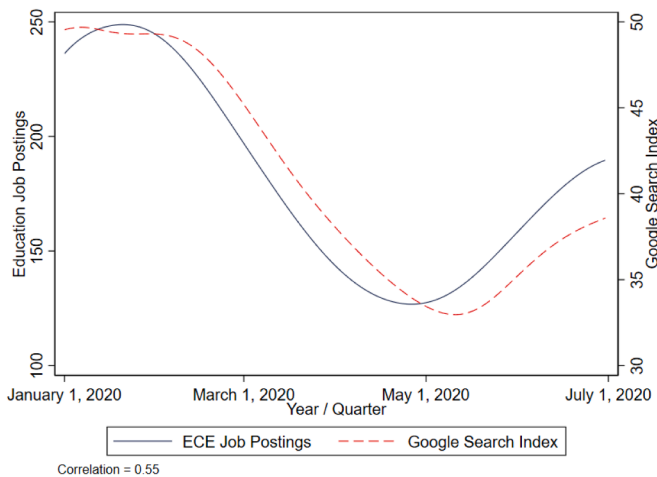


Fig. 2. Time series variation in early care and education job postings and child care internet search intensity, January 1 to June 30, 2020

Notes.—Source: Google Trends and Emsi. The figure plots a *lowess* smoothed series (across days) of the national number of job postings in early care and education (ECE) and the Google Trends search intensity score for the topic of “child care” on each day between January 1 and June 30, 2020.

decline in ECE job postings that is only spuriously related with the introduction and possible removal of SAHOs. To test this possibility, we draw on data from Google Trends and Emsi. The figure plots a *lowess* smoothed series (across days) of the national number of job postings in early care and education (ECE) and the Google Trends search intensity score for the topic “child care.”⁹ Google Trends creates a search intensity score that reflects the number of “child care” searches as a share of the total searches within a particular geographic area and time period. The share ranges between zero and 100 in each area, with zero representing the point in time with the lowest search intensity for “child care” and 100 representing the point in time with the highest intensity. This analysis relies Google search scores for all 50 states and the District of Columbia on each day over the period January 1 to June 30, 2020.

We present multiple pieces of descriptive evidence on the primary outcome variable—the number of ECE job postings—over the period January 1 to June 30, 2020. While previous studies show that labor demand collapsed throughout the economy, Fig. 1 reveals that demand fell especially sharply in the ECE sector: the number of such job postings is now at roughly 70% of their average June to December 2019 levels, while job postings overall have almost fully rebounded. Next, Fig. 2 and Appendix Fig. A2 present the time series in the absolute number of ECE job postings and (for comparison purposes) child care internet search intensity with a *lowess* smoother across days (Fig. 2) and the unsmoothed totals (Appendix Fig. A2).¹⁰ Both graphs show a steady number of job postings and internet searches during the pre-pandemic period—in January and February—followed by dramatic declines in March and April and a rebound starting in May. Although the March–April decline is meaningful for both series, it is substantially larger for job postings: between January and April, internet search activity declined by roughly 67%, whereas ECE job postings fell by 140%. Finally, Fig. 3 documents the variation in our key independent

⁹ The topical search includes search terms related to child care (i.e., day care), different spellings of the search terms (e.g., childcare), and varying languages Google Trends have been used to study the demand for religion (Bentzen, 2020), unemployment insurance benefits (Goldsmith-Pinkham & Sojourner, 2020), and health care (Hanna & Hanna, 2019).

¹⁰ While we find a correlation of 0.56 in the pooled time series, the correlation declines significantly from 0.50 in April to 0.15 in May and back up to 0.36 in June as the economy recovers. The child care searches, in particular, display a clear within-week pattern, rising during the weekdays and then falling abruptly throughout weekend. This is consistent with the idea that the demand for child care is employment-driven.

variable—implementation of a SAHO—using the fraction of states with a SAHO in place on each day. We find considerable variation in the timing of state adoption and removal of these policies.

3. Identification strategy

To quantify the impact of the COVID-19 pandemic on the supply of child care, we exploit plausibly exogenous variation in the staggered adoption and expiration of SAHOs across the states. That is, we begin with a variant of a difference-in-differences (DD) estimator by comparing ECE supply in states that adopted and removed these orders sooner versus later than their counterparts:

$$Y_{st} = \gamma_1 SAHO_{st}^{OPEN} + \gamma_2 SAHO_{st}^{CLOSE} + \xi COVID_{st} + \theta X'_{st} + \phi_s + \lambda_t + \epsilon_{st} \quad (1)$$

where Y denotes our measure of job postings for ECE in state s and day t , $SAHO_{st}^{OPEN}$ denotes a binary indicator for whether a given state has implemented a stay-at-home order, $SAHO_{st}^{CLOSE}$ denotes an indicator for whether a given state has removed its SAHO, $COVID$ denotes the two-week logged cumulative number of COVID-19 infections and deaths, and X denotes a vector of other state containment policies, including state of emergency declarations, non-essential business and school closures, business reopenings and reclosures, and face mask requirements. The ϕ and λ denote state and day-of-the-year fixed effects, which remove time-invariant heterogeneity and seasonality. Standard errors are clustered at the state- and month-levels (Bertrand, Duflo & Mullainathan, 2004). The two SAHO indicators are constructed such that the marginal effects γ_1 and γ_2 are interpreted relative to the pre-pandemic period.

Our key identifying assumption is that the timing of these SAHOs is plausibly exogenous—that is, ECE job postings in states that adopted a SAHO would have trended similarly to those that did not, conditional on observables and fixed effects. One concern with these results is that beliefs about the pandemic and its economic implications are highly polarized, thereby prompting states to adopt policies that are correlated with political forces (Makridakis & Rothwell, 2020). This would likely behave as a confounding factor since political affiliation is correlated with economic activity and the demand for child care. However, our inclusion of state and time fixed effects purges variation across locations that is time-invariant. In this sense, we exploit variation in the timing that different states were affected by infections, which prompted earlier versus slower responses. Our time fixed effects also purge variation in the national labor market, which collapsed during April (Kahn et al., 2020).

Nonetheless, another concern is that the supply or demand for child care might be influenced by factors that are also correlated with the timing of states' SAHO enactment. For example, governors undertook a variety of symbolic and policy-oriented actions contemporaneously with the implementation of SAHOs. Our time-varying state policy controls, which we described above, address the concern that states may adopt a SAHO based on increasing concern among its businesses, which could be correlated with other economic fundamentals that shift the supply and demand for child care.¹¹ Failure to account for these underlying economic conditions and shocks would also lead to biased estimates.

To address these concerns, we control for the overall number of education-related job postings and the two-week lag of COVID-19 infections and deaths, which addresses potential time-varying omitted variables that could be correlated with the passage of state policies and the demand for child care. Our controls isolate variation that is uniquely affecting the ECE sector. As a final test of our identifying assumption, we

¹¹ We have also introduced child care closures as an additional control. While, not surprisingly, the direct effect is negatively correlated with job postings, it is not statistically significant (and lower in magnitude) with the inclusion of a SAHO indicator. Moreover, the interaction effect between child care closure and SAHO is not statistically significant (p -value = 0.33).

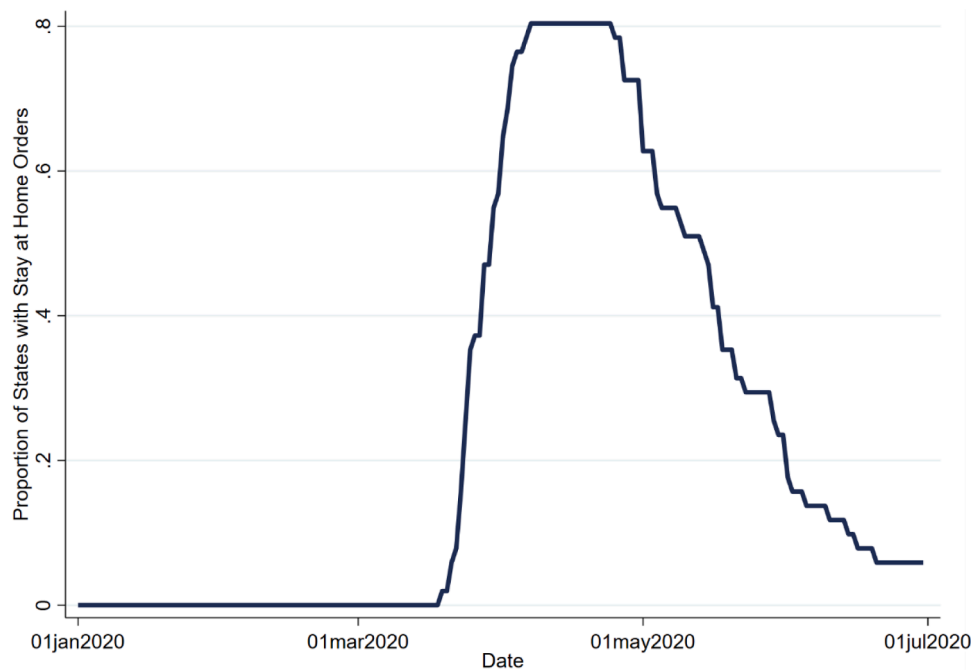


Fig. 3. Time series variation in the adoption of stay-at-home orders

Notes.—Source: Dave et al. (2020), Mervosh et al. (2020), National Governors Association, and Raifman et al. (2020). The figure plots the fraction of states that implemented a SAHO on each day between January 1 and June 30, 2020.

Table 1.

DD estimates for the impact of SAHOs on ECE job postings.

	ln(total number of ECE job postings)			(4)	(5)	(6)	(7)
	(1)	(2)	(3)				
$1[t > SAHO]$	−0.233*** (0.079)		−0.221*** (0.085)	−0.162*** (0.049)	−0.159*** (0.046)	−0.113** (0.046)	−0.113** (0.043)
$1[t > Removal\ of\ SAHO]$		0.114 (0.089)	0.051 (0.096)	−0.041 (0.045)	−0.058 (0.043)	0.026 (0.044)	0.005 (0.043)
$ln(All\ Edu\ Job\ Postings)$					0.275*** (0.015)		0.274*** (0.015)
$ln(Cumulative\ Infections - two\ week\ lag)$						−0.075*** (0.020)	−0.062*** (0.020)
$ln(Cumulative\ Deaths - two\ week\ lag)$						−0.016 (0.018)	−0.025 (0.018)
$1[t > Business\ Closure]$				−0.029 (0.058)	−0.013 (0.054)	0.004 (0.050)	0.015 (0.048)
$1[t > Business\ Opening]$				0.025 (0.061)	0.021 (0.062)	−0.007 (0.054)	−0.011 (0.055)
$1[t > Business\ Re-closure]$				−0.262** (0.122)	−0.239** (0.121)	−0.186 (0.116)	−0.166 (0.115)
$1[t > Face\ Mask\ Requirement]$				−0.050 (0.035)	−0.046 (0.033)	0.009 (0.034)	0.009 (0.032)
$1[t > State\ of\ Emergency]$				0.003 (0.058)	−0.017 (0.054)	−0.028 (0.055)	−0.046 (0.052)
$1[t > Public\ School\ Closure]$				0.056 (0.068)	0.025 (0.067)	0.052 (0.061)	0.022 (0.062)
Observations	9282	9282	9282	9282	9282	8568	8568
State Fixed Effects	No	No	No	Yes	Yes	Yes	Yes
Day Fixed Effects	No	No	No	Yes	Yes	Yes	Yes

Notes.—Sources: Emsi. The table reports the coefficients associated with regressions of logged number of all early care and education (ECE) job postings on an indicator for the passage/ removal of a stay-at-home order (SAHO), conditional on the logged number of overall education job postings, the 14-day log number of cumulative COVID-19 cases and deaths, an indicator for statewide business closures, opening and re-closures, an indicator for a state of emergency declaration, school closure orders, and state and day-of-the-year fixed effects. Standard errors, adjusted for clustering in state and month cells, are in parentheses.

* $p < 0.10$.

** $p < 0.05$.

*** $p < 0.01$.

implement an event study analysis—an explicit test the parallel trends assumption—which investigates whether ECE supply was already shifting in states prior to the enactment of SAHOs.

4. Results

4.1. Main results

We begin by estimating Eq. (1) under several different specifications, as shown in Table 1. The dependent variable in all models is the log total

number of ECE teacher job postings. Column (1) shows that the implementation of a SAHO is associated with a 23% reduction in ECE job postings. Column (2) shows that removing the SAHO increases ECE job postings by 11%, but the association is not statistically significant at the 10% level. When both indicators are included, in Column (3), we continue to find that the introduction of a SAHO remains equally statistically and economically significant, but the coefficient on the removal of the SAHO becomes statistically and economically less significant. However, these coefficients should not be interpreted as causal; they capture only the cross-sectional differences in ECE job postings

Table 2.

DD Estimates for the impact of SAHOs on ECE job postings, by age group and sector.

	ln(ECE jobs by age-group)				ln(ECE jobs by age-group)		
	(1) All ECE	(2) Infant and Toddler	(3) Preschool- Age	(4) School-Age	(5) Child Care	(6) Head Start	(7) Pre-K
$1[t > SAHO]$	−0.162*** (0.049)	−0.055 (0.039)	−0.173*** (0.039)	−0.085*** (0.021)	−0.169*** (0.048)	−0.030** (0.014)	−0.041* (0.022)
$1[t > Removal\ of\ SAHO]$	−0.041 (0.045)	0.013 (0.036)	−0.070* (0.039)	−0.052*** (0.020)	−0.056 (0.044)	−0.016 (0.016)	0.023 (0.020)
Observations	9282	9282	9282	9282	9282	9282	9282
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Day Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes.—Sources: Emsi. The table reports the coefficients associated with regressions of logged number of early care and education (ECE) job postings by age-group and sector on an indicator for the passage/ removal of a stay-at-home order (SAHO), conditional on an indicator for statewide business closures, opening and re-closures, an indicator for a state of emergency declaration, school closure orders, and state and day-of-the-year fixed effects. Standard errors, adjusted for clustering in state and month cells, are in parentheses.

* $p < 0.10$.

** $p < 0.05$.

*** $p < 0.01$.

between states that adopted SAHOs versus those that did not.

Column (4) introduces our time-varying state policy controls and, more importantly, state and day-of-the-year fixed effects, allowing us to exploit within-state over-time variation in the adoption and elimination of SAHOs. In this model, the adoption *and* removal of a SAHO led to lower ECE job postings relative to the pre-pandemic period, by 16% and 4%, respectively.¹² However, given that the coefficient on SAHO removal is substantially smaller in magnitude than that for SAHO adoption, we conclude that the ECE labor market began to recover fairly quickly after state economies were allowed to open up.¹³ This is consistent with the descriptive evidence presented in Appendix Fig. A2, which shows that the number of ECE job postings started increasing in April. Nevertheless, it is clear that job postings are still below pre-pandemic levels. All of the state policy variables have the expected signs, but only the reclosure of businesses (following a reopening) is associated with (a 26% reduction in) ECE job postings. This likely stems from the fact that the employees who had returned to work were once again forced to stay home, thereby allowing them to care for their children rather than relying on market-based ECE.

Columns (5) through (7) implement some robustness checks on the baseline specification in column (4). One concern with these results is that there may be other time-varying shocks that are correlated with the introduction of SAHOs and the larger education sector in the state. To isolate the variation unique to ECE job postings, column (5) controls for the logged total number of education job postings. Adding this control does not substantially alter the coefficients on SAHO enactment and removal. Not surprisingly, we see a strong positive elasticity between total educational services and ECE job postings. Column (6) implements a second robustness check by controlling for a 14-day lag in the cumulative number of COVID-19 cases and deaths. We see a strong negative association between deaths and ECE job postings. In this model, SAHO enactment implies an 11% reduction in job postings, while the

coefficient on SAHO removal implies a three percent increase in postings. Finally, column (7) includes all three auxiliary controls (log total number of education postings and COVID-19 cases and deaths). Once again, the coefficient on SAHO enactment implies an 11% reduction in job postings. Together, this evidence suggests that our primary specification is robust to a number of additional controls.

We now investigate whether the SAHO policies differentially affect job postings by the age-group of children served and by sector, as shown in Table 2. Column (1) presents our baseline estimate for all ECE job postings, as shown in Table 1. Column (2) shows that the adoption of a SAHO is associated with a statistically insignificant 5.5% decline in job postings for infant/toddler teachers, but columns (3) and (4) show that it is associated with a statistically significant 17.3% reduction in postings for preschool-age teachers and 8.5% reduction in school-age teacher postings. A potential explanation for this pattern is that parents may be particularly likely to take care of very young children even in the absence of SAHOs, making the demand for infant/toddler child care more inelastic. Interestingly, we also find that the removal of a SAHO is associated with statistically significant declines in preschool-age and school-age teachers—although by a smaller amount than when a SAHO was in effect—implying that the market for these teachers is beginning to recover.

We uncover additional heterogeneity across different ECE sectors. In particular, column (5) finds striking evidence that the implementation of SAHOs reduced private-sector child care job postings by 17%, but columns (6) and (7) show that SAHOs had only economically and statistically weak 3% and 4% effects on job postings for the public-sector Head Start and pre-kindergarten programs. That public-sector hiring is less sensitive to SAHO-driven shocks may be attributed to a few factors, including that these services are less sensitive to negative shocks generally. Indeed, recent work by Brown and Herbst (2021) shows that while private center-based child care providers are substantially exposed to the business cycle, public ECE programs such as Head Start and pre-kindergarten as well as the public K-12 system are not sensitive to macroeconomic conditions. In addition, public ECE programs received stimulus funding (independent of the Paycheck Protection Program) to remain operational during the pandemic. For example, the CARES Act passed in March 2020 provided significant additional funding for Head Start programs (\$750 million) as well as \$500 million for supplemental summer programs.¹⁴

We also explore potential heterogeneity in the treatment effects. Consistent with Makridakis and Rothwell (2020) who find that political polarization led to the adoption of overly lax and overly restrictive policies, rather than more optimal middle-of-the-road policies, we find

¹² The results are also robust to excluding states that were early adopters of the SAHOs, like California. Doing so produces a marginally lower estimate of −0.15 (p-value=0.003). Moreover, if we drop Washington DC, Florida, Louisiana, New Jersey, New Mexico, and New York, the coefficient declines to −0.12 (p-value=0.02).

¹³ We have also explored the relationship between the time that a SAHO is enacted and child care job postings. First, we find a correlation of −0.29 when we compare the number of days a state has a SAHO on with the average daily growth in ECE job postings from March to June 2020. Second, we create an indicator for whether a state had above the median number of days the SAHO was on and interact it with the introduction of a SAHO, allowing separate coefficients for these two sets of states. Consistent with our intuition that the longer the SAHO is implemented, the more deleterious its effects on the labor market, we find an additional 8% decline in the number of ECE job postings.

¹⁴ <https://eclkc.ohs.acf.hhs.gov/policy/pi/acf-pi-hs-20-03>

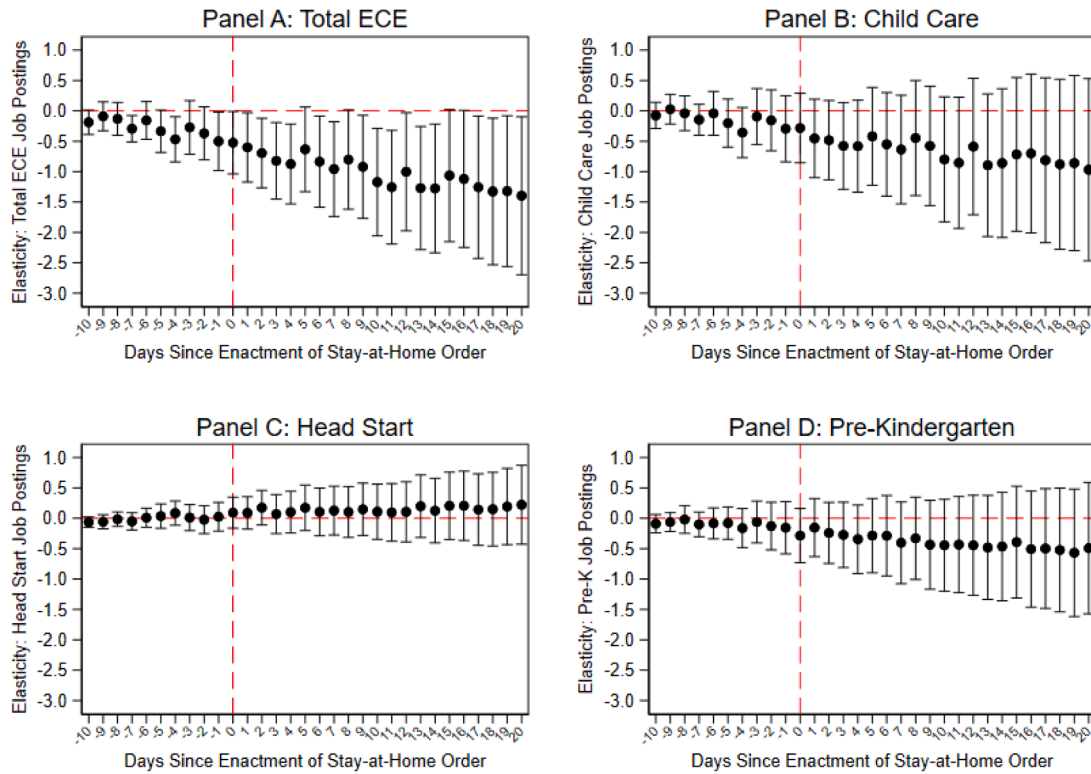


Fig. 4.. Event study estimates for the supply of ECE

Notes.—Source: Emsi. The figure investigates the presence of pre-trends by regressing the logged number of job postings associated with overall early childhood education (ECE), child care, Head Start, and pre-kindergarten teachers on 10 daily lagged and 20 daily lead variables, conditional on state and day-of-the-year fixed effects and the other state policy controls. Standard errors are clustered at the state- and month-level. (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

that the effects of SAHOs on ECE job postings are concentrated in states with a Republican governor. For example, in these states, we find a 20.5% decline in ECE job postings, which has not yet recovered, whereas we find a statistically insignificant and null association in states with Democrat governors and a weak recovery in ECE job postings in the more recent months following the removal of SAHOs.

4.2. Robustness

Our earlier results are identified off within-state variation in the timing of SAHO adoptions. We have also shown that our main results are robust to the inclusion of overall education job postings, which isolates variation unique to the ECE sector, as well as controls for the number of COVID-19 cases and deaths to account for the possible endogeneity of SAHOs. We now present additional robustness exercises that address identification challenges. First, we begin by examining the presence of pre-trends in our DD estimator. We adopt a state-by-day event study design, relying on the staggered adoption of SAHOs. This methodology is useful for examining whether child care supply was already shifting in states prior to the implementation of SAHOs. We estimate the event study model as follows:

$$Y_{st} = \sum_{j=-10}^{20} \gamma_{t+j} d_{st0+j} + \theta X'_{st} + \phi_s + \lambda_t + \epsilon_{st}$$

where $d_{s,t0+j}$ denotes a set of indicator variables centered around the day on which each state implemented its SAHO, t_0 . We construct an indicator variable for each of the 10 days prior to and 20 days after enactment of the policy, using as the benchmark period 15 to 11 days prior to enactment. The event study model includes the other state policy variables as well as the state and day fixed effects.

The event study results for ECE job postings are present in Fig. 4. We

estimate a separate version of the model for all ECE postings (Panel A), private-sector child care postings (Panel B), and the public-sectors programs Head Start (Panel C) and pre-kindergarten (Panel D). As shown in Panel A, while the pre-SAHO trends show a small relative decline in the two days prior to policy enactment, we uncover a sharper and larger reduction in overall ECE job postings immediately upon enactment. Evidence of pre-trends is even less detectable in the sector-specific analyses shown in Panels B through D. Together, these findings provide support for our methodological approach. Moreover, consistent with our primary DD results, while we see little evidence of a decline in job postings for Head Start and pre-kindergarten teachers, we see economically meaningful declines in private-sector child care job postings in the 20 days following a SAHO—roughly a 0.5% to 1.5% decline.

Another concern with our main results is that the declines in ECE job postings might simply reflect a decline in the demand among parents for market-based child care. For example, given the surge in remote work, parents may be more accustomed to taking care of their children at home (Brynjolfsson et al., 2020). To investigate whether changes in the demand for child care can explain our estimated SAHO effects, we use Google Trends search intensity scores for the topic “child care” as a proxy for demand.¹⁵ As shown in Fig. 2 and Appendix Fig. A2, the volume of ECE job postings tracks quite closely the intensity of Google searches for child care. This implies that demand-side effects of SAHOs should not be discounted as a possible explanation for our supply-side results. To probe this issue more carefully, we control for the Google Trends search score in the baseline DD model, and find that the

¹⁵ Our search for the topic of “child care” includes other phrases that are associated with child care. Moreover, we have explored the correlation between “child care” and other related phrases, such as “child care near me” and “day care,” obtaining correlations of 0.56 and 0.73, respectively.

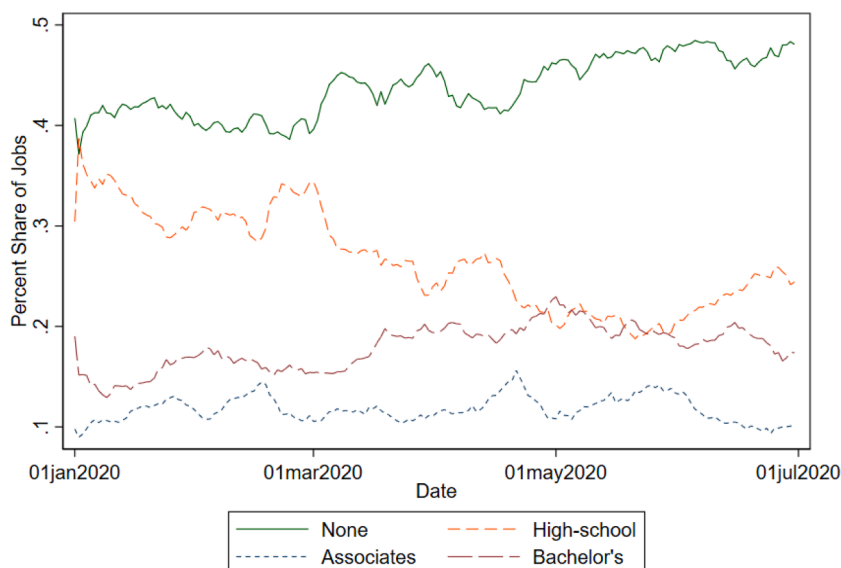


Fig. 5.. Minimum education required in the ECE job postings, percent of the total
 Notes.—Source: Emsi. The figure shows the time series in the share of ECE job postings (by day) that do not indicate a required minimum level of education and those requiring a minimum of a high school diploma, an AA degree, or a BA+ degree. The time series for this analysis runs from January 1 to June 30, 2020. (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

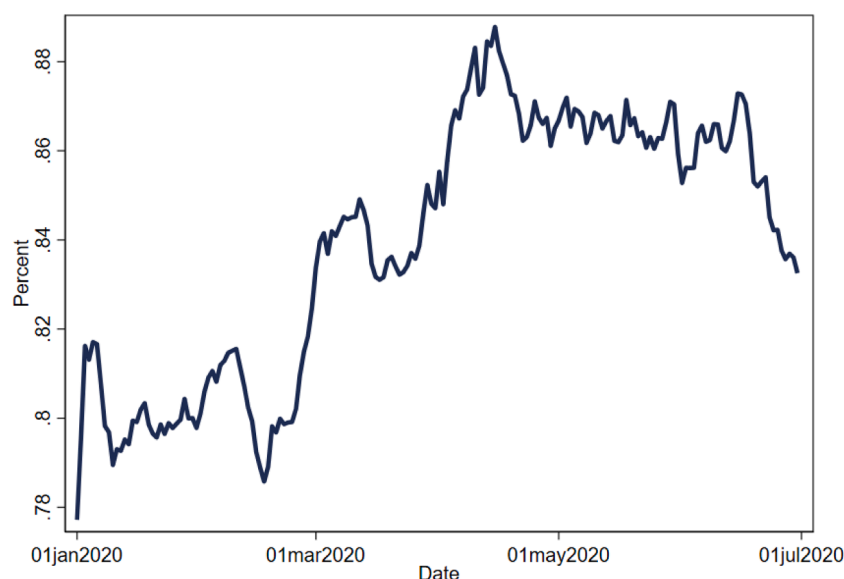


Fig. 6.. Full-time work in the ECE job postings, percent of the total
 Notes.—Source: Emsi. The figure shows the time series in the share of ECE job postings (by day) requesting full-time work hours. The time series for this analysis runs from January 1 to June 30, 2020.

estimates on SAHO enactment and removal are not altered. We then regress the Google search score on the indicator of SAHO enactment, conditional on the usual state controls and fixed effects. We find a statistically insignificant 1.5% decline in search activity. This suggests that, while search activity may have declined, it is not highly correlated with the adoption of SAHOs after controlling for a variety of state characteristics, nor do changes in parent demand explain the relationship between SAHOs and ECE supply.

4.3. The demand for ECE teacher characteristics

We have shown that the number of ECE teacher job postings fell substantially following the enactment of a SAHO with the labor market

appearing to have rebounded after the SAHO was rescinded. An important question is whether the characteristics of these jobs have changed over the past few months. In particular, it is critical to know whether the educational requirements of ECE teachers has changed, in addition to whether these jobs are changing the number of work hours. It may be the case that, in an effort to offset the increased operating costs from complying with new health and safety standards, ECE programs may hire teachers with lower levels of education or at reduced work hours. Although such changes may be financially advantageous, they may come at the expense of (lower) classroom quality, which is an important predictor of early childhood development (Auger, Farkas, Burchinal, Duncan & Vandell, 2014).

To examine these issues, we exploit information in the job postings

Table 3.

DD estimates for the impact of SAHOs on ECE job postings, by minimum education level required and work hours offered.

	(1) No Ed Listed	(2) High School	(3) AA Degree	(4) BA+ Degree	(5) Full- time Hours
<i>1[t > SAHO]</i>	−0.018 (0.028)	−0.081*** (0.031)	−0.022 (0.033)	−0.018 (0.028)	−0.007 (0.015)
<i>1[t > Removal of SAHO]</i>	−0.028 (0.030)	−0.035 (0.029)	0.040 (0.037)	0.050* (0.029)	−0.069** (0.029)
Observations	6613	6613	6613	6613	6613
State Fixed Effects	Yes	Yes	Yes	Yes	Yes
Day Fixed Effects	Yes	Yes	Yes	Yes	Yes

Notes.—Sources: Emsi. The table reports the coefficients associated with regressions of logged number of early care and education (ECE) job postings by minimum education level required and part-time/full-time hours offered on an indicator for the passage/ removal of a stay-at-home order (SAHO), conditional on an indicator for statewide business closures, opening and re-closures, an indicator for a state of emergency declaration, school closure orders, and state and day-of-the-year fixed effects. Standard errors, adjusted for clustering in state and month cells, are in parentheses.

* $p < 0.10$.

** $p < 0.05$.

*** $p < 0.01$.

on the minimum level of education required and the part- or full-time work status of the position. Specifically, we code the education requirements into four categories: no education requirement listed, high school diploma or GED, some college credits or an associate's degree (AA), and a bachelor's degree or higher (BA). We also distinguish between job postings requiring part- and full-time work. Fig. 5 plots the time series in the daily share of ECE job postings in each education category between January 1 and July 30, 2020, while Fig. 6 provides the analogous plot for full-time employment. Fig. 5 reveals that the share of ECE jobs requiring a high school degree fell substantially over this period. These declines were mostly offset by the increased number of postings not containing any requirement, but also somewhat offset by postings requiring at least a BA degree. Indeed, the share of postings requiring an AA degree did not change much throughout this period. It is unclear why providers would eschew listing an education requirement, although one possibility is to increase hiring flexibility during a period of growing labor market uncertainty. Fig. 6 shows that, prior to the pandemic, most ECE positions were part-time. This changed substantially after the pandemic, with ECE providers overwhelmingly favoring full-time hours for their teachers.

To what extent is the implementation and expiration of SAHOs responsible for these descriptive patterns? To probe this question, we estimate versions of the DD model in equation [1], using as the dependent variable binary indicators for whether any ECE job posting (in a state-day cell) does not contain an explicit education requirement, requires a high school diploma or GED, requires some college credits or an associate's degree (AA), and requires a bachelor's degree or higher (BA). We also estimate a model in which the dependent variable is a binary indicator for any full-time ECE positions.

Results from these models are shown in Table 3. Although SAHOs (both adoption and removal) are unrelated to the likelihood of stipulating no education requirement [column (1)], they led to sizeable reductions in the share of job postings requiring a high school diploma [column (2)]. These reductions are offset by increases in job postings requiring higher levels of education, particularly a BA degree [column (4)]. These effects are most prominent after the SAHO is removed. Finally, column (5) shows that SAHO adoption is unrelated to the likelihood of full-time job postings, but SAHO removal appears to have reduced the share of such postings, perhaps a sign that the ECE market is reverting to pre-pandemic hiring preferences. Together, these analyses provide suggestive evidence that ECE providers may value increased

flexibility, given that the duration of the pandemic and the current policy environment are unpredictable.

4.4. Is the SAHO-driven reduction in the demand for ECE teachers really distinctive?

Recall that our baseline DD estimate suggests that the number of ECE job postings fell by over 16% for each day that a SAHO was in effect. How does this compare to the demand for workers in all other education sectors? To investigate whether our ECE effects merely reflect across-the-board reductions in labor demand, we re-estimate Eq. (1), using the log number of all education-related job postings (except ECE) as the outcome variable. Results from this DD model are reported in Appendix Table A2. Column (3) shows that all other education job postings fell by a statistically and economically insignificant 1% following the enactment of a SAHO. This estimate is substantially smaller than that in the model for ECE job postings, suggesting that the ECE labor market—more so than other educational services—has been particularly and uniquely affected by these containment policies.

The estimates presented in Appendix Tables A3 and A4 further probe the distinctiveness of the child care market by examining the impact of SAHOs on the demand for nursing and residential care workers. We find that there is a statistically significant *positive* effect on job postings for nursing employment (Appendix Table A3), which is consistent with the surge in the demand for healthcare over the pandemic, and a small, statistically insignificant negative effect on job postings for residential care workers (Appendix Table A4). Together, these results provide additional confirmation that the child care industry was disproportionately affected by SAHOs.

4.5. Is there a deficit of child care job postings?

One way of assessing whether the introduction of SAHOs led to a long-term decline in the demand for child care talent is by regressing a measure of *cumulative* ECE job postings on our state policy indicators. We present these in Appendix Table A5. Under our preferred specification in column 4, we find that the introduction of SAHOs led to a 16% decline in ECE job postings, which is significant at the 5% level, and the removal led to a 4% decrease, which is not significant at conventional levels. When we control for a 14-day lag of Covid-19 infections and deaths, we find that our baseline effect declines in magnitude to an 11% drop in ECE job postings and the removal of SAHOs rises in magnitude to a 3% rise in ECE job postings. In this sense, the introduction of SAHOs led to a systematic deficit in ECE job postings, but the evidence on whether the gap was closed is mixed.

5. Conclusion

Arguably the most robust state-level policy response to the COVID-19 pandemic has been the implementation of stay-at-home orders (SAHOs). Throughout the Spring of 2020, 40 states and the District of Columbia enacted such a policy to slow the spread of the virus and to alleviate capacity constraints experienced by hospitals and other health care providers. These policies remained in place anywhere from 24 days in Mississippi to 104 days (and counting) in California.¹⁶

Although SAHOs have helped mitigate the spread of COVID-19, in part because of general compliance with these orders, such policies may have caused substantial job loss and firm closure—perhaps in the short- and long-run. One particularly vulnerable, though essential, sector is the market for non-parental ECE. Indeed, ECE services—many of them small businesses—operate on thin profit margins, with some analyses

¹⁶ See Makridakis and Wu (2020), Barrios et al. (2020), and Ding et al. (2020) for an assessment of the social and political dimensions of SAHOs and social distancing more generally.

suggesting that programs must keep enrollments close to maximum capacity in order to stay in business (Workman & Jensen-Howard, 2018). However, the labor demand for ECE needs to remain intact for when states end their SAHOs and parents reenter the labor force.

Although some previous work has surveyed child care providers about their plans to close or alter their hiring behavior in the wake of COVID-19, to date no study has quantified the impact of implementing containment policies like SAHOs on the ECE market, which has remained persistently depressed, relative to trend, despite the ongoing recovery in other sectors. The current paper attempts to fill this gap by estimating the impact of SAHOs on labor demand (i.e., number of online job postings) using the staggered adoption of these laws. Our results suggest that SAHO enactment reduces the number of ECE job postings by 16% *per day*—implying a reduction in supply. Importantly, however, we also find that job postings increased dramatically after the SAHO was lifted, although the number of such postings remains 4% lower than that during the pre-pandemic period. Moreover, the reduction in job postings is driven by preschool-age teacher positions as well as providers in the private-sector. Indeed, SAHOs do not appear to influence hiring behavior in the market for Head Start and pre-kindergarten teachers. Our results are robust to the inclusion of other state policies, overall education job postings, and COVID-19 infections and deaths, thereby mitigating concerns about omitted variables.

How do we interpret these results? While we cannot rule out a potentially negative effect of SAHOs on child care search behavior, it is statistically insignificant. In this sense, we interpret the effect of SAHOs on child care as largely a supply-side mechanism—that is, had the COVID-19 pandemic and the national quarantine not hit, parents would have continued searching for child care and job postings would have continued being posted. One way to assess the magnitude of our results is to compare the DD estimates to the number of ECE job postings prior to the full onset of the pandemic. For example, throughout the month of January, child care providers advertised for 7723 teacher positions—or an average of approximately 250 positions per day. Therefore, our DD

estimates imply that as many as 1200 fewer teachers are hired for every month that a SAHO is in effect. Given that states mandate a child-to-staff ratio of approximately 10-to-1, on average, in center-based settings, a reduction of 1200 newly hired teachers means that 12,000 fewer preschool-age children can be cared for each month.

The labor market remains in flux as the pandemic continues to unfold well beyond initial expectations. An important caveat in our results is that the estimated treatment effect of SAHOs on the supply of ECE focuses on the short- and medium-run. This is particularly true of our analysis of SAHO removal, which is based on a few weeks of post-SAHO ECE job posting data. Although only time will tell whether the ECE market is able to fully rebound, our estimates suggest that programs quickly increased hiring activities after the SAHOs were lifted. Taken together, our results highlight the quantitatively important and persistent effect that SAHOs have had on the ECE market, which is important for state and local authorities to keep under consideration as they deliberate ongoing state policies to curb the virus.

Author statement

Chris M. Herbst: Conceptualization, Methodology, Software, Supervision, Writing- Original draft preparation, Reviewing, Editing

Christos Makridis: Data Curation, Writing- Original draft preparation, Methodology, Reviewing, Editing

Umair Ali: Visualization, Investigation, Formal Analysis, Data Curation

Appendix A

Figs. A1 and A2
Tables A1–A5

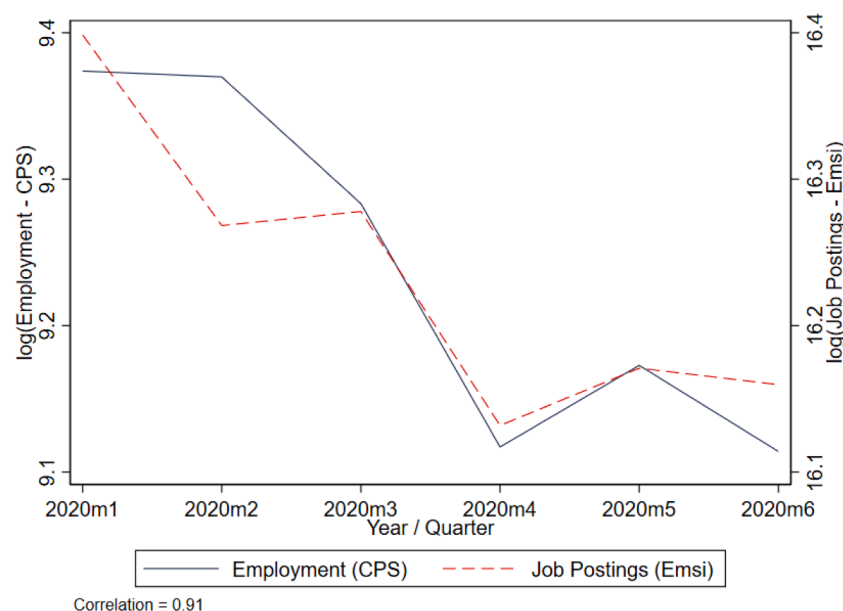


Fig. A1. Comparison of employment and job postings data

Notes.—Source: Current Population Survey and Emsi. The figure plots the logged number of employed workers in the Current Population Survey and the logged number of job postings from Emsi between January and June 2020.

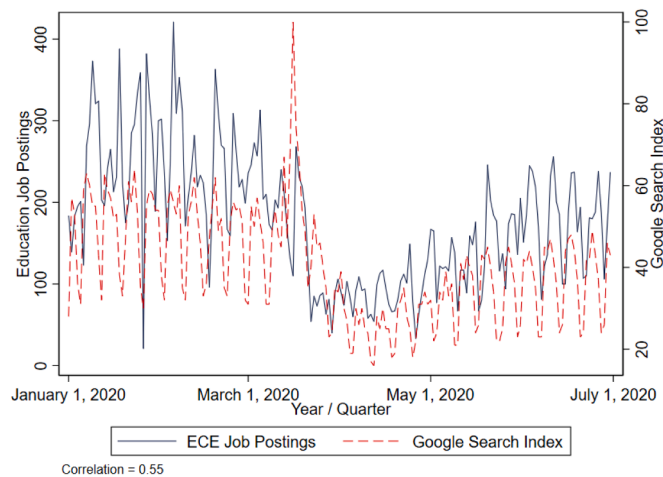


Fig. A2. Time series variation in early care and education job postings and child care internet search intensity, January 1 to June 30, 2020

Notes.—Source: Google Trends and Emsi. The figure plots the number of job postings in early care and education (ECE) and the Google Trends search intensity for the topic of “child care” on each day between January 1 and June 30, 2020.

Table A1.
Statewide implementation and expiration of “Stay at Home” orders.

State	SAHO Implementation Date	SAHO Expiration Date	State	SAHO Implementation Date	SAHO Expiration Date
Alabama	April 04	May 01	Montana	March 28	April 27
Alaska	March 28	April 25	Nebraska	—	—
Arizona	March 31	May 16	Nevada	April 01	May 09
Arkansas	—	—	New Hampshire	March 28	June 16
California	March 19	—	New Jersey	March 21	June 10
Colorado	March 26	April 27	New Mexico	March 24	—
Connecticut	March 23	May 21	New York	March 22	June 13
Delaware	March 24	June 01	North Carolina	March 30	May 23
District of Columbia	April 01	May 29	North Dakota	—	—
Florida	April 03	May 18	Ohio	March 24	May 21
Georgia	April 03	May 01	Oklahoma	—	—
Hawaii	March 25	—	Oregon	March 23	June 20
Idaho	March 25	May 01	Pennsylvania	April 01	June 05
Illinois	March 21	May 30	Rhode Island	March 28	May 09
Indiana	March 25	May 18	South Carolina	April 07	May 04
Iowa	—	—	South Dakota	—	—
Kansas	March 30	May 04	Tennessee	April 01	May 01
Kentucky	—	—	Texas	April 02	May 01
Louisiana	March 23	May 15	Utah	—	—
Maine	April 02	June 01	Vermont	March 25	May 16
Maryland	March 30	May 16	Virginia	March 30	May 29
Massachusetts	—	—	Washington	March 23	June 01
Michigan	March 24	June 02	West Virginia	March 24	May 04
Minnesota	March 28	May 18	Wisconsin	March 25	May 13
Mississippi	April 03	April 27	Wyoming	—	—
Missouri	April 06	May 04			

Table A2.
DD Estimates for the impact of sahos on all other education job postings.

	ln(total job postings for all education)		
	(1)	(2)	(3)
$1[t > SAHO]$	−0.046 (0.030)		−0.011 (0.038)
$1[t > Removal\ of\ SAHO]$		0.071** (0.033)	0.064 (0.041)
Observations	9282	9282	9282
State Fixed Effects	Yes	Yes	Yes
Day Fixed Effects	Yes	Yes	Yes

Notes: Standard errors, adjusted for clustering in state and month cells, are in parentheses.

* $p < 0.10$, *** $p < 0.01$.

** $p < 0.05$.

Table A3.

DD estimates for the impact of sahoh on skilled nursing job postings in nursing care facilities.

	ln(no. of nursing care job postings) (1)	(2)	(3)
<i>1[t > SAHO]</i>	0.077** (0.033)		0.177*** (0.038)
<i>1[t > Removal of SAHO]</i>		0.071* (0.038)	0.181*** (0.051)
Observations	9100	9100	9100
State Fixed Effects	Yes	Yes	Yes
Day Fixed Effects	Yes	Yes	Yes

Notes.—Sources: Emsi. The table reports the coefficients associated with regressions of logged nursing care job postings on an indicator for the passage/removal of a stay-at-home order (SAHO), conditional on the logged number of overall education job postings, the log number of cumulative COVID-19 cases and deaths, an indicator for statewide business closures, opening and re-closures, an indicator for a state of emergency declaration, school closure orders, and state and day-of-the-year fixed effects. Standard errors, adjusted for clustering in state and month cells, are in parentheses. 50 Sample comprises of state-by-day observations across all US States, except for Washington D.C.

* $p < 0.10$.** $p < 0.05$.*** $p < 0.01$.**Table A4.**DD estimates for the impact of SAHOs on job postings in residential care facilities.^a

	ln(no. of residential care job postings) (1)	(2)	(3)
<i>1[t > SAHO]</i>	−0.053* (0.032)		−0.036 (0.037)
<i>1[t > Removal of SAHO]</i>		0.055* (0.033)	0.032 (0.037)
Observations	9100	9100	9100
State Fixed Effects	Yes	Yes	Yes
Day Fixed Effects	Yes	Yes	Yes

Notes.—Sources: Emsi. The table reports the coefficients associated with regressions of logged residential care job postings on an indicator for the passage/ removal of a stay-at-home order (SAHO), conditional on the logged number of overall education job postings, the log number of cumulative COVID-19 cases and deaths, an indicator for statewide business closures, opening and re-closures, an indicator for a state of emergency declaration, school closure orders, and state and day-of-the-year fixed effects. Standard errors, adjusted for clustering in state and month cells, are in parentheses. 50 Sample comprises of state-by-day observations across all US States, except for Washington D.C. ** $p < 0.05$, *** $p < 0.01$.

* $p < 0.10$.^a These include family homes, child residential homes, handicapped residential care, children homes and senior care homes.**Table A5.**

DD estimates for the impact of SAHOs on ECE job postings for child care.

	ln(number of cumulative child care job postings)					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>1[t > SAHO]</i>	−0.233*** (0.079)		−0.221** (0.085)	−0.162*** (0.049)	−0.159*** (0.046)	−0.113** (0.046)
<i>1[t > Removal of SAHO]</i>		0.114 (0.089)	−0.051 (0.096)	−0.041 (0.045)	−0.058 (0.043)	0.026 (0.044)
<i>Log(All Edu Job Postings)</i>					0.275*** (0.015)	0.274*** (0.015)
<i>1[t > Business Closure]</i>				−0.029 (0.058)	−0.013 (0.054)	0.004 (0.050)
<i>1[t > Business Opening]</i>				0.025 (0.061)	0.021 (0.062)	−0.007 (0.054)
<i>1[t > Business Re-closure]</i>				−0.262** (0.122)	−0.239** (0.121)	−0.186 (0.116)
<i>1[t > Face Mask Requirements]</i>				−0.050 (0.035)	−0.046 (0.033)	0.009 (0.034)
<i>1[t > State of Emergency]</i>				0.003 (0.058)	−0.017 (0.054)	−0.028 (0.055)
<i>1[t > Public School Closures]</i>				0.056 (0.068)	0.025 (0.067)	0.052 (0.061)
Observations	9282	9282	9282	9282	9282	8568
State Fixed Effects	No	No	No	Yes	Yes	Yes
Day Fixed Effects	No	No	No	Yes	Yes	Yes

Notes.—Sources: Emsi. The table reports the coefficients associated with regressions of logged cumulative number of all early care and education (ECE) job postings on an indicator for the passage/removal of a stay-at-home order (SAHO), conditional on the logged number of overall education job postings, the log number of cumulative COVID-19 cases and deaths, an indicator for statewide business closures, opening and re-closures, an indicator for a state of emergency declaration, school closure orders, and state and day-of-the-year fixed effects. Columns 6 and 7 also include 14-day lagged values on logged cumulative infections and deaths, which reduces the sample marginally. Standard errors, adjusted for clustering in state and month cells, are in parentheses. * $p < 0.10$.

** $p < 0.05$.*** $p < 0.01$.

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