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Amy Shelton & Collin Hitt

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## Taking Attendance: Estimating Homeschooling Populations in States without Official Homeschool Data – a Pilot Analysis in Missouri

Amy Shelton and Collin Hitt

School of Education, Saint Louis University, Saint Louis, MO, USA

### ABSTRACT

There are over one million school-age children in Missouri, and we estimate 61,000 (6% of all school-age children) are home-schooled. Missouri is one of 29 states that does not require homeschooling to be reported. Using methods that can be replicated elsewhere with publicly available data, we test three approaches to estimating homeschool participation: using American Community Survey (ACS) data; subtracting public and estimated private school counts from ACS school-age totals; and polling parents. We comment on the usefulness and limitations of each approach and provide a model for researchers seeking to estimate homeschooling trends in states that lack administrative data.

### KEYWORDS

Homeschooling

There are over one million school-age children in Missouri, according to the U.S. Census Bureau's 1-Year American Community Survey (2023). While state administrative data indicates approximately 860,000 of these children attend public schools, no state agency collects private school or homeschool enrollment counts. Thus, Missouri policymakers lack information on how the remaining 153,000 school-age children are enrolled across the private school and homeschool sectors and how demand for these two nonpublic options has changed over time.

Enrollment in Missouri public schools dropped from approximately 880,000 students to 860,000 students between the 2019–20 and 2020–21 school years, mirroring public school exits nationwide at the start of the COVID-19 pandemic (Diemer et al., 2022). It is unclear whether private school and homeschool enrollments increased by 20,000 students over this same period and whether growth in nonpublic schooling was primarily captured in the private school or homeschool sector.

Missouri is one of 17 states that does not collect private school enrollment counts and one of 29 states that does not require homeschooling to be reported (Dee, 2023). While state policymakers have access to estimates

of private school enrollment through the National Center for Education Statistics (NCES), there is no such source of information on homeschool participation.

To close this data gap, we test three approaches to estimating homeschool enrollment using publicly available data. We examine homeschooling trends in Missouri from 2007–08 to 2023–24, with a particular focus on changes in homeschool participation during and after the COVID-19 pandemic. We estimate homeschool enrollment using ACS data only, subtracting administrative public school counts and NCES-estimated private school counts from the ACS total number of school-age children; and pooling results from parent polling. We comment on the usefulness and limitations of each of these approaches and triangulate our findings, estimating that 6% of school-age children, or approximately 61,000 children, are homeschooled in Missouri. We provide a model for other researchers seeking to estimate homeschooling trends in states that lack administrative data.

### **The Missouri context**

Missouri is considered a “no notice, low regulation” state by the Home School Legal Defense Association (2024). The state does not require homeschool families to declare their intent to homeschool but does provide guidance for families wishing to file a declaration with the county or local school district to minimize the likelihood of being investigated for truancy (Missouri Revisor of Statutes, 1986). The state education department tracks when children leave a public school to be homeschooled but has no record of the number of children who exited private schools or who have always been homeschooled (Bernhard & Renaud, 2023).

The primary state law that applies to homeschool families is a requirement that children engage in some type of formal schooling by age seven (Missouri Revisor of Statutes, 2024). The definition of formal schooling includes homeschooling. Families for Home Education (2024a, 2024b) has lobbied for 40 years for “the inalienable right of the parents of Missouri to teach their own children without state regulation or control” and supported legislation in 2024 that would further protect the right to homeschool without state intervention or monitoring. Moreover, Missouri is home to a growing education savings account program that ostensibly allows homeschooling families to participate (Mo. 101st General Assembly, 2021). Yet, state policymakers considering legislation that impacts homeschool families lack information on the prevalence of homeschooling, changes in homeschool participation in the state over time and the characteristics of the homeschool constituency.

## The research gap

A recent nationwide analysis examined homeschooling trends between 2019–20 and 2021–22 but included only the 21 states that require families to report their intent to homeschool and where state administrative data on both private school and homeschool enrollment is available (Dee, 2023). Missouri was excluded from this analysis, as no state agency collects private school or homeschool enrollment counts.

The U.S. Department of Education collects nationwide data on homeschooling through the Parent and Family Involvement in Education (PFI) survey but does not present results by state (National Center for Education Statistics, n.d.).<sup>1</sup> According to the PFI, national homeschooling rates hovered around 3.3% between 2012 and 2020 (Eggleston & Fields, 2021). However, the COVID-19 pandemic drastically impacted school modalities, and the U.S. Census Bureau's Household Pulse Survey (HPS) found that 11.1% of households with school-age children nationwide (and 10.9% in Missouri) were homeschooling in the fall of 2020 (Bernhard & Renaud, 2023; Eggleston & Fields, 2021; McShane, 2021). The organization EdChoice (2024) commissioned the firm Morning Consult to survey Missouri voters with school-age children and found 8% ( $\pm 6\%$ ) of Missouri families had homeschooled any of their children for at least one full school year. We are interested in understanding how prevalent homeschooling is in Missouri today and whether our estimates of homeschool participation align with HPS, EdChoice, and other survey findings.

We address the following research questions:

- (1) Can we estimate homeschool participation in Missouri using only ACS data?
- (2) Does a “find the residual” approach using ACS data, administrative public school counts, and NCES-estimated private school counts lead to estimates of homeschool participation in Missouri that align with polling estimates?
- (3) How has homeschooling participation in Missouri changed during and after the COVID-19 pandemic?

We address a significant gap in our understanding of the prevalence of homeschooling and changes in homeschool participation in Missouri. Missouri is not alone in lacking administrative data on homeschooling, and so we detail our methods for the purpose of replication in other states. We conclude with a brief discussion of policy recommendations.

## Data and methods

We test three approaches to estimating homeschool counts and participation rates. First, we examine 1-year ACS data on school enrollment

for 5–17-year-olds. Second, we test a “find the residual” method using the ACS total count of 5–17-year-olds, K-12 public school enrollment data from the Missouri Department of Elementary and Secondary Education (MO DESE), and estimated K-12 private school enrollment data from the Private School Universe Survey (PSS) and National Center for Education Statistics (NCES). Finally, we examine polling results from the Household Pulse Survey (HPS) and other polls of Missouri parents. Below we explain the data, methods, and limitations of each approach.

### ***Approach #1: American Community Survey***

The U.S. Census Bureau’s 1-year ACS provides us with a useful annual estimate of the total number of school-age children living in Missouri. The ACS is administered year-round, and the Census Bureau uses responses from sampled households to estimate the demographics and socioeconomic conditions of the entire population. We calculate the school-age population (ages 5–17) as the sum of children ages 5–9, 10–14, and 15–17 and start from this total when estimating the number of homeschooled children in each of our three approaches.

The ACS asks respondents to indicate school type and grade (if applicable) for each person in the household, and ACS reports the results by age band (ages 5–9, 10–14, and 15–17). We again sum across these three age bands to arrive at an annual estimate of the number and percentage of school-age children enrolled in each type of school. The numbers of school-age children enrolled in each school type sum to the total number of children ages 5–17.<sup>2</sup>

We examine 1-year ACS data for the state of Missouri from 2008 to 2023 (Appendix [Table A1](#)). We start with 2008 because of meaningful and relevant changes to the wording of questions on school type and grade in this data collection year.<sup>3</sup> One-year ACS data are not available for 2020 due to data collection challenges during the first year of the COVID-19 pandemic, and we impute data for 2020 as the midpoint between 2019 and 2021 values.

ACS counts are estimates and can have random noise. We smooth out variation in annual estimates by calculating a three-year rolling average (e.g., the smoothed estimate for 2023 is the average of 2021, 2022, and 2023). We smooth estimates for the total number of school-age children and for the number of school-age children by school type. We use these smoothed ACS estimates throughout this paper. Appendix [Table A1](#) includes smoothed estimates of enrollment by school type for ages 5–17, and Appendix [Table A2](#) shows estimates for ages 10–14. We use ages 10–14 data in our “find the residual” approach, as explained below.

### **Limitations**

This analysis would be straightforward if “homeschool” was a standalone school type on the ACS survey. Instead, the ACS lists “public school” as one school type and “private school, home school” as a second school category.<sup>4</sup> In addition, there is a third response option “no, has not attended in the last 3 months.” It is plausible some homeschool parents mark “no” rather than the response option beginning with “private school.” However, because formal schooling is not mandatory in Missouri until age seven, the “no school” category may also include 5- and 6-year-olds not yet enrolled in school, as well as high school-age children who have dropped out of school. In addition, because the ACS is administered year-round, it is plausible that some respondents complete the survey at the end of summer and select “no” because their child has not been enrolled in school for the previous three summer months.

Because of these limitations, the ACS does not allow us to precisely estimate homeschool numbers or participation rates. Homeschool students are potentially spread across two categories (“private school, home school” and “no school”) and make up unknown proportions of students in each of these categories. In the results that follow, we report trends in enrollment by school type over time. This gives insight into changes in participation in public and nonpublic schooling. However, we recommend states wanting to estimate homeschool participation specifically, rather than nonpublic participation more broadly, instead use both our second and third approaches, in which we first subtract public school and estimated private school enrollments from the overall school-age population, and then compare these results with those of the U.S. Census Bureau’s Household Pulse Survey.

### **Approach #2: Find the residual**

In our second approach, we start with the smoothed ACS estimate of the overall school-age population (ages 5–17) and subtract administrative public school enrollment and NCES-estimated private school enrollment to arrive at our estimate of homeschool enrollment by year. We then narrow our focus to the population ages 10–14 and subtract the number of children enrolled in public and private school in grades 4–8 to arrive at an estimate of homeschool enrollment for these middle grades. The age 5–9 demographic may include some children who have not yet begun formal schooling, as formal schooling is not mandatory until age seven in Missouri. The age 15–17 demographic may include students who have dropped out of high school. Thus, we expect the residual approach to be most accurate when estimating homeschool participation for the age 10–14 band.

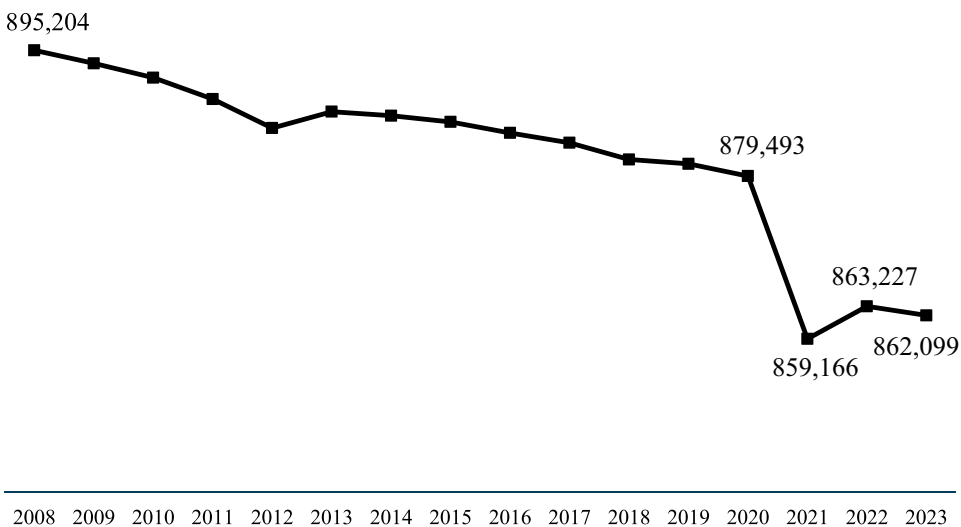
We have access to reasonably accurate public school enrollment data through MO DESE (2024). Below we examine public school enrollment trends and then explain how we use the Private School Universe Survey (PSS)

administered through the National Center for Education Statistics (NCES) to arrive at the best possible estimates of private school enrollment over time.

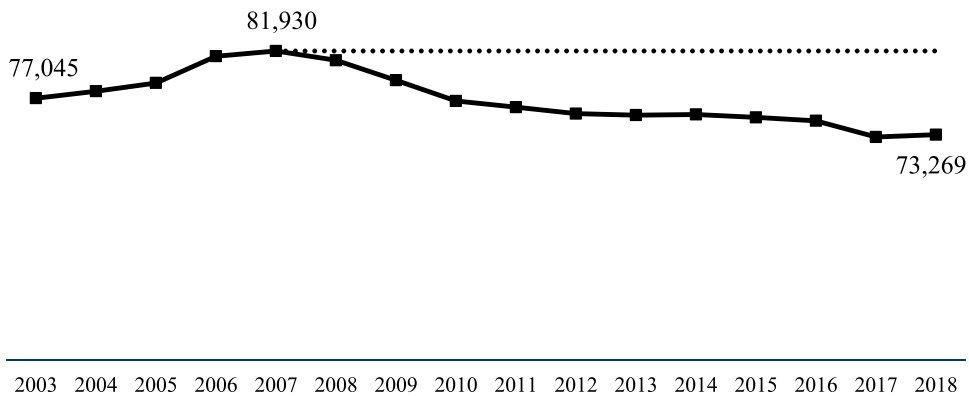
**Public school enrollment (MO DESE)**

We examine K-12 public school enrollment from 2007–08 through 2022–23 (Appendix Table A3). At the start of our study period, there were approximately 895,000 K-12 students enrolled in public schools in Missouri, but enrollment has decreased by 33,000 students (3.7%) over the past 15 years (MO DESE, 2024; Figure 1).<sup>5</sup> Approximately half of this enrollment decline can be explained by a net decrease of 16,000 students between the 2019–20 and 2021–22 school years, at the beginning of the COVID-19 pandemic. However, public school enrollment declines in Missouri preceded the pandemic.

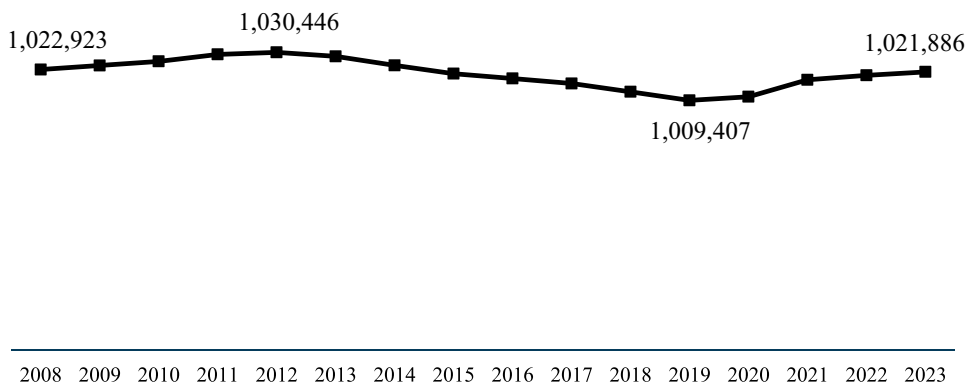
These declines could be explained in part by a steady decrease between 2007 and 2017 in the annual number of live births to women residing in Missouri (Centers for Disease Control and Prevention, 2024; Figure 2; Appendix Table A4). We examine birth cohorts from 2003 through 2018, as the cohort born in 2003 should be included in the ACS total number of 5–17-year-olds for the first time in 2008, and the cohort born in 2018 should be included in 2023 ACS data (Figure 2). We find the annual number of live births increased from 2003 through 2007, leading to an increase in the age 5–17 population from 2008 through 2012 (Figures 2 and 3). Five-year lagged births and the total number of school-age children then decreased each year through 2019 (Figure 3; Appendix Table A4). However, the two trend lines diverge in 2019. While increasingly smaller birth



**Figure 1.** Missouri K-12 Public School Enrollment, 2007–08 to 2022–23. *Source:* Missouri Department of Elementary and Secondary Education (MO DESE).



**Figure 2.** Missouri Live Births, 2003 to 2018. *Source:* Centers for Disease Control and Prevention (CDC).



**Figure 3.** Missouri Age 5–17 Population, 2008 to 2023 (Smoothed Estimates). *Source:* 1-year American Community Survey (ACS). *Note:* we address noise in ACS estimates by calculating a three-year rolling average (e.g., the smoothed estimate for 2023 is the average of 2021, 2022, and 2023).

cohorts turned five each year between 2019 and 2022, the age 5–17 population continued to increase in size. It may be that net in-migration of families with school-age children explains increases in the school-age population.

Recent increases in the size of the school-age population have also occurred alongside decreases in K-12 public school enrollment, suggesting that more families have been choosing nonpublic options in recent years (Fortino & Perez, 2024).

When we narrow our focus to public school enrollment changes in grades 4–8, we find that enrollment in the middle grades declined by 2.4% between 2007–08 and 2022–23 (Appendix Table A3). While overall K-12 enrollment increased in 2021–22 after a drop of 20,000 students in 2020–21, grade 4–8 public school enrollment has continued to decline

each year following the largest decrease in 2020–21. This fits with a decrease in ACS public school enrollment for 10–14-year-olds between 2021 and 2022 (Appendix Table A2).

### ***Private school enrollment (PSS)***

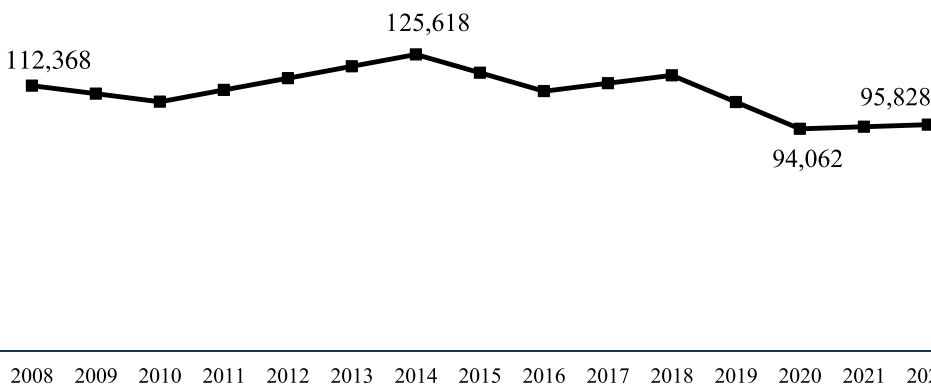
The PSS is an opt-in survey that has been administered to private schools every other year since 1989–90. Publicly available PSS data includes school-level information such as enrollment, demographics, and religious affiliation. Because not all private schools respond to the survey, NCES extrapolates from survey responses and non-response to estimate the total number of private schools and total K-12 private school enrollment by state and reports these estimates after each survey administration (National Center for Education Statistics, 2022). We calculate the annual Missouri response rate as the ratio of PSS-reported K-12 enrollment (enrollment of private schools that responded to the survey) to NCES-estimated total K-12 enrollment (estimated enrollment of all private schools, including those that did not respond to the PSS). We use this ratio of reported-to-estimated enrollment for grades K-12 to estimate total enrollment for grades 4–8 for all survey years from 2007–08 through 2021–22 (Appendix Tables A5 and A6). For years in which the PSS was not administered, we impute private school enrollment values as the midpoint between the previous and following years.

NCES estimates suggest K-12 private school enrollment increased by approximately 1,800 students between the 2019–20 and the 2021–22 school years, or 11% of the net decrease of 16,000 public school students during this time (Figure 4). This suggests that most of the increase we observe in the ACS “private school, home school” category over that time is due to increased homeschooling participation in Missouri.

### ***Limitations***

We acknowledge four key challenges with the residual approach. First, we start with the total number of 5–17-year-olds but subtract the total number of public and private school K-12 students. Ages 5–17 do not perfectly correspond with grades K-12. In particular, there are a number of students ages 18 or older who are not included in the total school-age count. Similarly, we match ages 10–14 with grades 4–8 but recognize this may not be a perfect match.

Second, private school enrollment is imprecisely estimated by NCES based on which schools responded and did not respond to the PSS. In addition, we further impute estimated enrollment for years in which the survey was not administered. Despite these challenges, however, we recommend using NCES-estimated enrollment rather than PSS-reported enrollment, as the PSS provides a known undercount of actual private school enrollment.



**Figure 4.** Missouri Estimated K–12 Private School Enrollment, 2007–08 to 2021–22. *Source:* Private School Universe Survey (PSS); National Center for Education Statistics (NCES). *Note:* NCES estimates the total K-12 private school enrollment by state based on PSS responses. For years in which the PSS was not administered, we impute private school enrollment values as the midpoint between the previous and following survey administration years.

Third, ACS data indicate that there are a number of school-age children reportedly enrolled in “no school.” In our residual method, we essentially consider these children to be homeschooled, though an unknown number may be younger than seven and not subject to mandatory school enrollment or may be students who have dropped out of high school. Thus, we expect the residual approach to be most accurate when estimating homeschool participation for the middle grades, in which we expect full enrollment in some type of formal schooling.

Finally, the ACS reports data according to calendar year and asks respondents about the enrollment status of school-age children in the previous 3 months, while public and private school enrollments are reported by school year. We match ACS calendar year data with the spring of the school year (e.g., ACS 2021 data with the 2020–21 school year). However, it is unknown if ACS calendar year data best describes the previous or following school year, and this likely varies year to year.

### **Approach #3: Polling parents**

#### **Household pulse survey**

The U.S. Census Bureau began administering the Household Pulse Survey (HPS) in April 2020. There have been 66 survey waves administered, and this data has allowed the Census Bureau to examine trends in the experiences of American families throughout the COVID-19 pandemic and beyond (U.S. Census Bureau, 2024).

The first 12 waves of the HPS asked respondents if at any time during February 2020 any children in the household were enrolled in a public or private school or educated in a homeschool setting in Kindergarten through 12th grade. In contrast to the ACS, public and private school enrollment are grouped as one response category on the HPS, and homeschool is offered as second category of school enrollment. Surveys administered from August 2020 through January 2022 asked about the 2020–21 school year; from March through July 2022, about the 2021–22 school year; from September 2022 through July 2023, about the 2022–23 school year; and since August 2023, about school enrollment in 2023–24.

We link survey waves to school years and calculate the average homeschool participation rate across all waves by school year, weighted by the number of Missouri households that responded to the survey wave and have children enrolled in K-12.

Starting in April 2021 (Week 28), the HPS asked respondents to indicate not only the types of K-12 schooling utilized by children in their household but also the *number* of children in the household enrolled in each type of school. The total number of children in the household who have been enrolled in public/private or homeschool can sum to more than the number of children in the household, as the same child can participate in both public/private and homeschool in the same school year. We calculate the child homeschool participation rate as the sum of the number of children who have been homeschooled divided by the sum of all children enrolled in public/private school or homeschooled. As with the household participation rate, we pool results across all survey waves by school year and estimate a child-weighted average homeschool percentage for all children enrolled in K-12, starting in the 2020–21 school year. In summary, we have a baseline household homeschool participation estimate for the 2019–20 school year but can only examine child-level participation starting in 2020–21.

HPS data is publicly available and can be used by any state interested in examining changes in homeschool participation during and after the COVID-19 pandemic. We also have access to data from a parent poll conducted in Missouri in 2021 and 2024, and we compare this data with HPS estimates.

### ***PRiME center parent polling***

In November and December 2021, the Saint Louis University Policy Research in Missouri Education (PRiME) Center partnered with professional polling firm YouGov to survey a sample of 600 Missouri parents of school-age children. Responses were weighted to approximate the characteristics of the state's parents as reported in the 2019 1-year ACS. Parents were asked to indicate the number of children in the household between the ages of 5 and 18

in Kindergarten through 12th grade. If a parent indicated more than one child, the survey randomly selected one (e.g., “youngest child”) for parents to consider when answering the remaining questions. Parents were asked the grade and current school type of this focus child, among other questions related to services received at school and perceptions of school quality. In June 2024, the PRiME Center again surveyed a sample of Missouri parents, and responses were weighted to reflect the state’s parents on gender, age, race, and education level.

## Findings

### ***Approach #1: American Community Survey***

There were approximately 1,023,000 children ages 5–17 in Missouri in 2008. The school-age population increased through 2012 but then decreased through 2019 and dropped below 1,010,000. The population has since increased and was estimated to be at 1,022,000 in 2023.

During the 15-year span from 2008 to 2023, the number and percentage of school-age children enrolled in public schools was the highest in 2014 at approximately 859,000 children and 83.80% of the school-age population. Both the ACS public school enrollment estimates and population share have steadily decreased since that time and reached a low of 826,000 children and 80.87% of the school-age population in 2023. ACS estimates do not reflect the 20,000-student plummet in public school enrollment we find in state administrative data between the 2019–20 and 2020–21 school years, in part because we calculate three-year rolling averages to address noise in ACS estimates. ACS estimates do indicate the public school population decreased by over 30,000 children between 2014 and 2023.

In contrast to public school enrollment, private/homeschool participation decreased numerically and as a proportion of the school-age population between 2008 and 2014 and reached a low of approximately 130,000 children in 2014 (12.67% of the school-age population). Since 2014, the private/homeschool sector has experienced steady annual growth, with a jump of 5,000 students between 2019–20 and 2020–21 and another jump of 5,500 students in 2021–22. ACS estimates suggest approximately 150,000 Missouri children ages 5–17 were attending private school or were being homeschooled in 2023. These two sectors now account for 14.67% of the school-age population, the highest population share over our 15-year study period. Examining PSS/NCES private school enrollment trends (approach #2 below) suggests that this growth is primarily due to increased homeschooling participation.

The percentage of school-age children enrolled in “no school” fluctuated between 3% and 4% from 2008 to 2019 but increased to 4.5% by 2022, an increase of 6,500 children over 2019 estimates. In 2022, approximately 46,000

Missouri children were reportedly enrolled in “no school.” This number decreased slightly in 2023 but remains at approximately 4.5% of the school-age population. Altogether, ACS estimates suggest that almost 196,000 5–17-year-olds in Missouri are not enrolled in public schools. This is higher than the 153,000 children mentioned in the introduction above, as ACS public school estimates are lower than state administrative counts.

We again note that the ACS does not allow us to precisely estimate home-school numbers or participation rates. Homeschool students are potentially spread across two categories (“private school, home school” and “no school”) and make up unknown proportions of students in each of these groups. However, the trends above give insight into changes in participation in public and nonpublic schooling in Missouri over time and indicate a clear trend of increased private/homeschool and “no school” enrollment. We find parallel trends when we look at the age 10–14 population (Appendix [Table A2](#)).

Below we start with our smoothed ACS estimates of the total school-age population and more precisely estimate annual homeschool participation using our residual method.

### ***Approach #2: Find the residual***

We subtract K-12 public school enrollment (MO DESE, 2024) and estimated K-12 private school enrollment (NCES) from the estimated total school-age population (ages 5–17) to arrive at our estimates of homeschool enrollment by year. We then repeat this approach for the age 10–14 population and grades 4–8, where we are most likely to find full enrollment in some type of formal schooling.

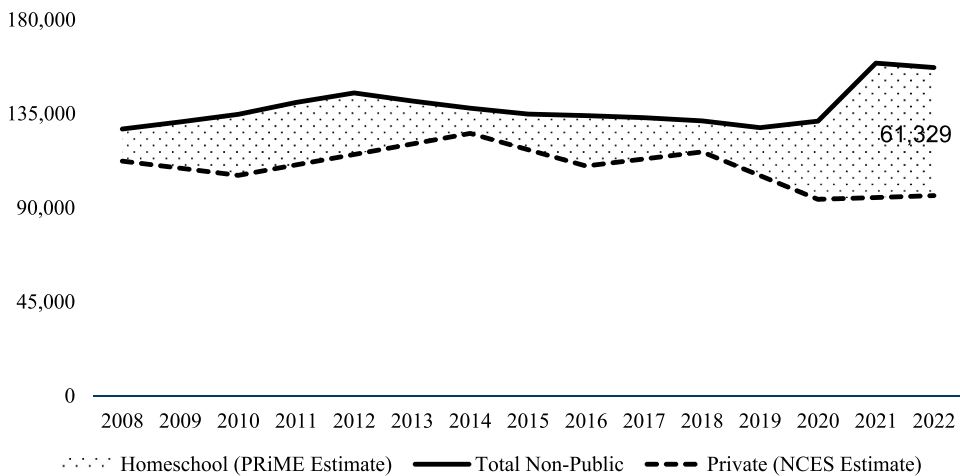
In the table below, we show estimated annual homeschool enrollment, as calculated through the residual method ([Table 1](#); [Figure 5](#)). This approach suggests the child-weighted average annual homeschool participation rate was 2.2% from 2008 to 2020. We then see homeschool participation jump to 6.3% in 2021, an increase of approximately 27,000 children. While estimates suggest homeschool enrollment decreased by 3,000 children the following year – paralleling a 4,000-student rebound in public school enrollment between 2020–21 and 2021–22—homeschool enrollment as a proportion of the state’s school-age population remained at 6%. This estimate suggests approximately 61,000 children were homeschooled in Missouri in 2022.

Homeschooling rates have been higher for the middle grades throughout our study period ([Table 1](#)). While on average 2.8% of 10–14-year-olds were homeschooled from 2008 to 2020, this percentage increased to almost 7% for the 2020–21 school year. Contrary to a slight decrease in homeschool participation for 5–17-year-olds between 2021 and 2022, we find the percentage of 10–14-year-olds who were homeschooled

**Table 1.** Estimated homeschool participation rates using the residual approach.

Year	Total (5-17)	DESE (K-12)	Est. PSS (K-12)	Est. Hm. (5-17)	Pct Hm. (5-17)	Total (10-14)	MO DESE (Gr. 4-8)	Est. PSS (Gr. 4-8)	Est. Hm. (10-14)	Pct. Hm. (10-14)
2008	1022923	895204	112368	15351	1.50	392531	338429	43062	11040	2.81
2009	1024688	893572	108958	22158	2.16	394579	338364	42066	14149	3.59
2010	1026507	891782	105548	29177	2.84	395595	339741	41069	14785	3.74
2011	1029559	889112	110551	29896	2.90	395458	340579	42838	12041	3.04
2012	1030446	885492	115553	29401	2.85	395409	340095	44606	10708	2.71
2013	1028678	887540	120586	20553	2.00	395623	339193	46189	10241	2.59
2014	1024745	887033	125618	12094	1.18	395230	338362	47772	9096	2.30
2015	1021105	886263	117829	17013	1.67	391016	338013	43672	9331	2.39
2016	1019002	884883	110040	24079	2.36	389704	339098	39572	11034	2.83
2017	1016796	883653	113400	19743	1.94	392970	343059	40963	8948	2.28
2018	1013170	881570	116760	14840	1.46	398756	346278	42354	10124	2.54
2019	1009407	881027	105411	22969	2.28	397902	348585	39559	9758	2.45
2020	1010993	879493	94062	37438	3.70	398367	347697	36764	13906	3.49
2021	1018418	859166	94945	64307	6.31	402131	338555	36693	26882	6.68
2022	1020384	863227	95828	61329	6.01	403010	334481	36623	31906	7.92

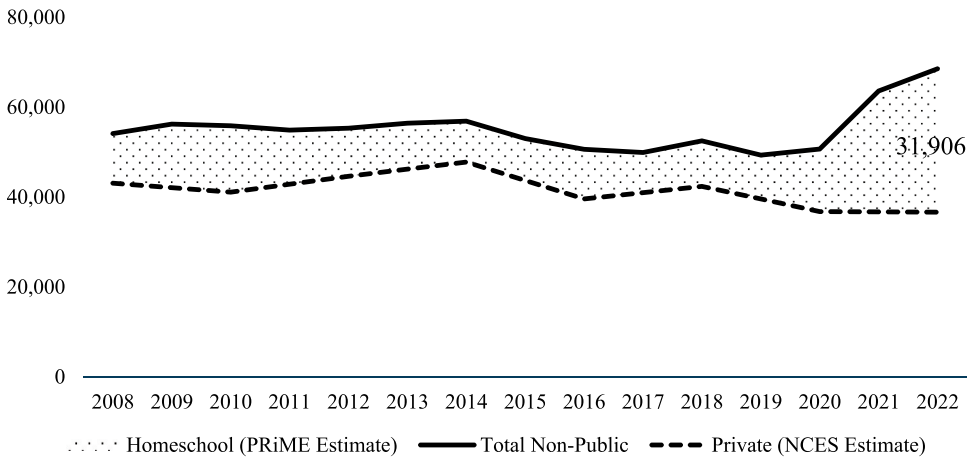
Source: 1-Year American Community Survey (ACS); Missouri Department of Elementary and Secondary Education (MO DESE); Private School Universe Survey (PSS); National Center for Education Statistics (NCES).



**Figure 5.** Missouri Estimated K-12 Homeschool Enrollment, 2007-08 to 2021-22. Source: 1-year American Community Survey (ACS); Missouri Department of Elementary and Secondary Education (MO DESE); Private School Universe Survey (PSS); National Center for Education Statistics (NCES).

increased by an additional 5,000 students in 2021-22 to almost 8% of the age 10-14 population (Figure 6).

In our final estimation approach below, we examine homeschool participation rates as reported on the U.S. Census Bureau’s Household Pulse Survey and PRiME Center polling of Missouri parents.



**Figure 6.** Missouri Estimated Gr. 4–8 Homeschool Enrollment, 2007–08 to 2021–22. *Source:* 1-year American Community Survey (ACS); Missouri Department of Elementary and Secondary Education (MO DESE); Private School Universe Survey (PSS); National Center for Education Statistics (NCES).

**Approach #3: Parent polling**

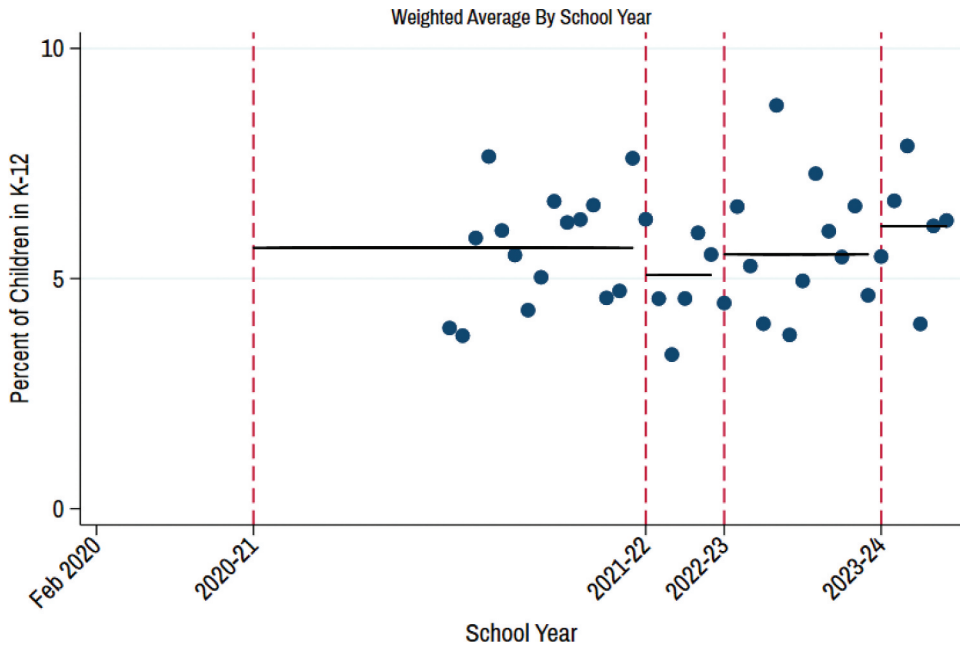
**Household pulse survey**

According to the HPS, the household-weighted average homeschool participation rate by school year in Missouri was 5.06% in February 2020 and increased to 7.67% for the 2020–21 school year (Table 2). Household homeschool participation decreased by one percentage point for 2021–22 and 2022–23, but 7.27% of Missouri households report homeschool participation in 2023–24. When examining rates by children instead of by households, we find 5.67% of Missouri children were homeschooled in 2020–21 (Table 2; Figure 7). This decreased to 5.08% in 2021–22 but then increased to 5.53% in 2022–23 and further increased to 6.14% in 2023–24. HPS estimates are approximately one percentage point lower than our residual estimates in 2021 and 2022 (Table 3). As mentioned above, our residual approach essentially counts students who are not enrolled in school as homeschool students and so perhaps slightly over-estimates homeschool participation for the age 5–17 population but more accurately captures homeschool rates for 10–14-year-olds.

**Table 2.** Weighted average homeschool participation rates by school year.

School Year	Households with Children in K-12	Children in K-12
Feb 2020	5.06	-
2020-21	7.67	5.67
2021-22	6.12	5.08
2022-23	6.59	5.53
2023-24	7.27	6.14

*Source:* U.S. Census Bureau’s Household Pulse Survey (HPS).



**Figure 7.** Prevalence of Homeschooling for Missouri Children. *Source:* U.S. Census Bureau’s Household Pulse Survey (HPS). *Note:* Each dot represents an HPS wave (waves 28-66). Black lines indicate the child-weighted average participation rate by school year.

**Table 3.** Estimated Missouri homeschool participation rates – residual approach v. polling.

Year (Spring)	Total (5-17)	Est. Home (5-17)	Est. Pct. Home (5-17)	Household Pulse Survey	PRiME Parent Poll
2008	1022923	15351	1.50	-	-
2009	1024688	22158	2.16	-	-
2010	1026507	29177	2.84	-	-
2011	1029559	29896	2.90	-	-
2012	1030446	29401	2.85	-	-
2013	1028678	20553	2.00	-	-
2014	1024745	12094	1.18	-	-
2015	1021105	17013	1.67	-	-
2016	1019002	24079	2.36	-	-
2017	1016796	19743	1.94	-	-
2018	1013170	14840	1.46	-	-
2019	1009407	22969	2.28	-	-
2020	1010993	37438	3.70	-	-
2021	1018418	64307	6.31	5.67	7.26
2022	1020384	61329	6.01	5.08	-
2023	1021886	-	-	5.53	-
2024	-	-	-	6.14	10.49

*Source:* 1-Year American Community Survey (ACS); Missouri Department of Elementary and Secondary Education (MO DESE); Private School Universe Survey (PSS); National Center for Education Statistics (NCES); Household Pulse Survey (HPS); PRiME Center.

In the Appendix, we compare HPS estimates with state administrative data from Arkansas, a state that collects data on homeschooling participation (Watson, 2023). We calculate an annual homeschool participation rate using the ACS total number of school-age children and state homeschooling counts (Appendix Table A7). In Arkansas, HPS estimates are approximately one percentage point higher than administrative data would suggest.

### *PRiME center parent polling*

PRiME Center parent polling in the fall of 2021 indicated 7.26% of Missouri school-age children were homeschooled, including 6.92% of children in grades 4–8 (Table 3). These numbers increased to 10.49% of all Missouri school-age children and 9.9% of 4th through 8th graders when parents were polled in 2024. While HPS estimates are approximately one percentage point lower than our residual estimates in 2021 and 2022, PRiME Center polling suggests homeschool participation may be higher than either our residual method or HPS polling suggests. Importantly, both HPS and PRiME Center polling indicate homeschool participation is higher in 2024 than it was in 2021 (Table 3). We are only able to estimate homeschool enrollment using the residual approach through 2022 because we do not yet have access to 2023–24 private school enrollment estimates, but parent polling suggests we may find homeschool participation is higher in 2023 and 2024 than it was 2022.

## **Conclusion**

We test three approaches to estimating homeschool participation in Missouri: using ACS data only; subtracting administrative public school counts and NCES-estimated private school counts from the ACS total number of school-age children; and pooling results from parent polling.

We are unable to estimate homeschool participation using ACS data only, as homeschool students are likely counted in both the “private school, home school” and “no school” categories and make up an unknown proportion of students in each category. Using the residual approach and the Household Pulse Survey, we estimate at least 6% of Missouri children ages 5–17 are homeschooled in 2024. This suggests approximately 61,000 Missouri children are homeschooled, a substantial increase from 37,000 children in 2020. To put this number into perspective, the number of children homeschooling in Missouri is roughly equal to the combined public school enrollments of St. Louis City and Kansas City.

This is a massive shift in the educational landscape. It is important for state policymakers to understand school enrollment trends in Missouri and in the nation, particularly as parent demand for alternative schooling options has increased since the start of the COVID-19 pandemic.

There is an obvious opportunity to improve data collection at the federal and state levels. We recommend the U.S. Census Bureau consider separating “private school” and “home school” on the ACS questionnaire to better track homeschool participation rates over time and that the state of Missouri consider collecting official data on homeschool enrollment.

Our approach can easily be replicated in other states, all of whom have access to ACS population data, state administrative data on public school enrollment, NCES estimates of total private school enrollment, and Household Pulse Survey data on homeschooling. As with PRiME Center polling in Missouri, other organizations may be conducting representative polls of parents and families that would provide additional data. The math is simple for researchers willing to compile data from several sources.

## Notes

1. The PFI is administered every three to four years, and results of the 2023 survey administration will be released in 2024. In 2019, prior to the COVID-19 pandemic, approximately 2.8% of children ages 5–17 were homeschooled nationwide (National Center for Education Statistics, 2023).
2. “Respondents who did not answer the enrollment question were assigned the enrollment status and type of school of a person with the same age, sex, race, and Hispanic or Latino origin whose residence was in the same or nearby area. . . . Respondents who marked both the ‘public’ and ‘private’ boxes are edited to the first entry, ‘public’” (U.S. Census Bureau, 2022, p. 129).
3. In 2008, Question 10a was amended to add “home school” to the “private school, private college category” (U.S. Census Bureau, 2022, p. 130). In addition, question 10b was amended to group grades 1–12 together. The survey question allows respondents to write in the exact grade for each child. Previously, grade levels were grouped as grades Kindergarten, 1 to 4, 5 to 8, and 9 to 12.
4. “Field interviewers were instructed to classify individuals who were home schooled as enrolled in private school. The guide sent out with the mail questionnaire included instructions for how to classify home schoolers. . . . Home schools are defined as ‘parental-guided education outside of public or private school for grades 1–12’” (U.S. Census Bureau, 2022, p. 129). The ACS reference period is 3 months prior to the date of interview.
5. Total K-12 public school enrollment as reported by MO DESE (2024) is higher than ACS public school enrollment estimates for 5–17 year olds. We consider MO DESE data to be a more accurate representation of K-12 enrollment, as it captures the universe of children enrolled in public schools. Our ACS school-age counts exclude high school students who are 18 or older. Importantly, this is a challenge in using the residual method to estimate homeschooling numbers—18 and 19 year olds are not included in the total number of school-age children ages 5–17.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

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## Appendix

**Table A1.** Smoothed estimates of enrollment by school type, ages 5–17.

Year	Total	Public	Pct. Public	Priv/Home	Pct. P/H	No School	Pct. No Sch.	(Non-Pub.)	(Pct. Non)
2008	1022923	841411	82.26	148173	14.49	33339	3.26	181512	17.74
2009	1024688	841854	82.16	147159	14.36	35676	3.48	182835	17.84
2010	1026507	847197	82.53	142673	13.90	36637	3.57	179310	17.47
2011	1029559	849386	82.50	140675	13.66	39497	3.84	180173	17.50
2012	1030446	855522	83.02	134616	13.06	40308	3.91	174924	16.98
2013	1028678	855656	83.18	133559	12.98	39464	3.84	173022	16.82
2014	1024745	858777	83.80	129836	12.67	36132	3.53	165968	16.20
2015	1021105	853896	83.62	131520	12.88	35689	3.50	167209	16.38
2016	1019002	851370	83.55	131845	12.94	35787	3.51	167632	16.45
2017	1016796	846219	83.22	132986	13.08	37591	3.70	170577	16.78
2018	1013170	842594	83.16	132312	13.06	38264	3.78	170576	16.84
2019	1009407	837006	82.92	132805	13.16	39596	3.92	172401	17.08
2020	1010993	834475	82.54	134601	13.31	41917	4.15	176518	17.46
2021	1018418	834293	81.92	139822	13.73	44303	4.35	184125	18.08
2022	1020384	829059	81.25	145376	14.25	45949	4.50	191325	18.75
2023	1021886	826370	80.87	149918	14.67	45598	4.46	195515	19.13

Source: 1-Year American Community Survey (ACS). Note: We address noise in ACS estimates by calculating a three-year rolling average (e.g., the smoothed estimate for 2023 is the average of 2021, 2022, and 2023). We smooth estimates for the total number of school-age children and the number of children by school type. Non-public includes both private/homeschool and no school.

**Table A2.** Smoothed estimates of enrollment by school type, ages 10–14.

Year	Total	Public	Pct. Public	Priv/Home	Pct. P/H	No School	Pct. No Sch.	(Non-Pub.)	(Pct. Non)
2008	392531	331138	84.36	56140	14.30	5253	1.34	61393	15.64
2009	394579	332547	84.28	55930	14.17	6103	1.55	62032	15.72
2010	395595	334970	84.67	54536	13.79	6090	1.54	60626	15.33
2011	395458	334563	84.60	54094	13.68	6801	1.72	60895	15.40
2012	395409	336305	85.05	52398	13.25	6706	1.70	59104	14.95
2013	395623	338400	85.54	50384	12.74	6839	1.73	57223	14.46
2014	395230	340582	86.17	48554	12.28	6094	1.54	54647	13.83
2015	391016	336204	85.98	48781	12.48	6031	1.54	54812	14.02
2016	389704	332903	85.42	50270	12.90	6531	1.68	56801	14.58
2017	392970	335433	85.36	50750	12.91	6788	1.73	57538	14.64
2018	398756	340265	85.33	51017	12.79	7474	1.87	58492	14.67
2019	397902	339816	85.40	50498	12.69	7588	1.91	58086	14.60
2021	398367	338751	85.03	50929	12.78	8687	2.18	59616	14.97
2020	402131	340856	84.76	52058	12.95	9217	2.29	61275	15.24
2022	403010	338977	84.11	54703	13.57	9331	2.32	64033	15.89
2023	399535	333401	83.45	56706	14.19	9428	2.36	66134	16.55

Source: 1-Year American Community Survey (ACS). Note: We address noise in ACS estimates by calculating a three-year rolling average (e.g., the smoothed estimate for 2010 is the average of 2008, 2009, and 2010). We smooth estimates for the total number of school-age children and the number of children by school type. Non-public includes both private/homeschool and no school.

**Table A3.** Change in live births, school-age population, and public school enrollment.

Year	Live Births (5-Year Lag)	Change (Births)	School-Age Pop. (5-17)	Change (Ages 5-17)	Pub. School (Gr. K-12)	Change (Gr. K-12)
2008	77045		1022923		895204	
2009	77765	720	1024688	1765	893572	-1632
2010	78618	853	1026507	1819	891782	-1790
2011	81385	2767	1029559	3052	889112	-2670
2012	81930	545	1030446	887	885492	-3620
2013	80963	-967	1028678	-1768	887540	2048
2014	78905	-2058	1024745	-3933	887033	-507
2015	76759	-2146	1021105	-3640	886263	-770
2016	76117	-642	1019002	-2103	884883	-1380
2017	75446	-671	1016796	-2206	883653	-1230
2018	75296	-150	1013170	-3626	881570	-2083
2019	75360	64	1009407	-3763	881027	-543
2020	75061	-299	1010993	1586	879493	-1534
2021	74705	-356	1018418	7424	859166	-20327
2022	73034	-1671	1020384	1966	863227	4061
2023	73269	235	1021886	1502	862099	-1128

Source: Centers for Disease Control and Prevention (CDC); 1-Year American Community Survey (ACS); Missouri Department of Elementary and Secondary Education (MO DESE). Note: We address noise in ACS estimates by calculating a three-year rolling average (e.g., the smoothed estimate for 2023 is the average of 2021, 2022, and 2023).

**Table A4.** Change in public school enrollment.

Year (Spring)	Total (Gr. K-12)	Change (Gr. K-12)	Pct. Change (Gr. K-12)	Total (Gr. 4-8)	Change (Gr. 4-8)	Pct. Change (Gr. 4-8)
2008	895204			338429		
2009	893572	-1632	-0.18	338364	-65	-0.02
2010	891782	-1790	-0.20	339741	1377	0.41
2011	889112	-2670	-0.30	340579	838	0.25
2012	885492	-3620	-0.41	340095	-484	-0.14
2013	887540	2048	0.23	339193	-902	-0.27
2014	887033	-507	-0.06	338362	-831	-0.24
2015	886263	-770	-0.09	338013	-349	-0.10
2016	884883	-1380	-0.16	339098	1085	0.32
2017	883653	-1230	-0.14	343059	3961	1.17
2018	881570	-2083	-0.24	346278	3219	0.94
2019	881027	-543	-0.06	348585	2307	0.67
2020	879493	-1534	-0.17	347697	-888	-0.25
2021	859166	-20327	-2.31	338555	-9142	-2.63
2022	863227	4061	0.47	334481	-4074	-1.20
2023	862099	-1128	-0.13	330342	-4139	-1.24

Source: Missouri Department of Elementary and Secondary Education (MO DESE).

**Table A5.** Estimated private school enrollment.

Year	PSS (Schools)	NCES Est. (Schools)	PSS (Gr. K-12)	NCES Est. (Gr. K-12)	Ratio PSS/Est.	PSS (Gr. 4-8)	Est. (Gr. 4-8)
2008	586	690	101567	112368	0.90	38923	43062
2010	583	693	98542	105548	0.93	38343	41069
2012	579	1270	93898	115553	0.81	36247	44606
2014	533	-	85108	125618	0.68	32366	47772
2016	490	867	79710	110040	0.72	28665	39572
2018	508	778	85903	116760	0.74	31161	42354
2020	454	642	69237	94062	0.74	27061	36764
2022	488	629	76002	95828	0.79	29046	36623

Source: Private School Universe Survey (PSS); National Center for Education Statistics (NCES). Note: NCES estimates the total number of private schools and total K-12 private school enrollment by state based on PSS responses. We use the ratio of PSS-reported to NCES-estimated total K-12 private school enrollment to estimate enrollment for grades 4-8.

**Table A6.** Change in private school enrollment.

Year (Spring)	NCES Est. (K-12)	Change (K-12)	Pct. Change (K-12)	Est. (Gr. 4-8)	Change (Gr. 4-8)	Pct. Change (Gr. 4-8)
2008	112368			43062		
2010	105548	-6820	-6.07	41069	-1993	-4.63
2012	115553	10005	9.48	44606	3537	8.61
2014	125618	10065	8.71	47772	3165	7.10
2016	110040	-15578	-12.40	39572	-8200	-17.16
2018	116760	6720	6.11	42354	2782	7.03
2020	94062	-22698	-19.44	36764	-5591	-13.20
2022	95828	1766	1.88	36623	-141	-0.38

Source: Private School Universe Survey (PSS); National Center for Education Statistics (NCES). Note: NCES estimates the total number of private schools and total K-12 private school enrollment by state based on PSS responses. We use the ratio of PSS-reported to NCES-estimated total K-12 private school enrollment to estimate enrollment for grades 4-8.

### Robustness Check – Arkansas Data

To assess the reliability of HPS estimates, we examine data from the neighboring state of Arkansas, a state that collects data on homeschooling participation (Watson, 2023). The University of Arkansas Office for Education Policy (OEP) polled Arkansas parents in 2021 and 2024. In the table below, we compare state administrative data from Arkansas with average homeschool participation rates by school year as reported on the HPS and homeschool participation rates from the 2021 and 2024 OEP parent polls (Appendix Table A7). State administrative data shows a jump in homeschool participation for the 2020–21 and 2021–22 school years, when approximately 6% of 5–17-year-olds in Arkansas were homeschooled. HPS polling suggests 7% of school-age children in Arkansas were homeschooled in 2020–21, one percentage point above state data. It is possible HPS results overestimate true homeschooling rates or that state data is an undercount of true homeschool enrollment. State homeschooling counts dropped in 2022–23; if the total number of children ages 5–17 stayed approximately the same from 2022 to 2023, this would mean 5% of school-age children were homeschooled in 2022–23. HPS polling results are again one percentage point higher. Both HPS polling and OEP parent polling suggest approximately 7% of students were homeschooled in 2023–24, a year when we lack access to administrative data. If HPS polling continues to be approximately one percentage point above state data, this would indicate approximately 6% of children in Arkansas are currently homeschooled. OEP polling estimates of 11.44% from 2021 seem implausibly high; this could be due to higher survey participation from homeschool families or confusion about the definition of homeschooling during the COVID-19 pandemic, when many students enrolled in public schools were attending school from home.

**Table A7.** Arkansas homeschool participation rates.

Year (Spring)	Total (5-17)	Homeschool	Pct. Home	HPS	OEP
2008	503842	15660	3.11	-	-
2009	505416	16061	3.18	-	-
2010	516679	15791	3.06	-	-
2011	513520	16303	3.17	-	-
2012	519973	16405	3.15	-	-
2013	521420	17215	3.30	-	-
2014	515744	17299	3.35	-	-
2015	517240	17904	3.46	-	-
2016	518644	19229	3.71	-	-
2017	521793	19520	3.74	-	-
2018	515868	20331	3.94	-	-
2019	515685	21959	4.26	-	-
2020	-	22249	-	-	-
2021	523869	30267	5.78	6.94	11.44
2022	518067	30205	5.83	5.15	-
2023	-	25862	-	6.14	-
2024	-	-	-	7.26	6.93

Source: 1-Year American Community Survey (ACS); Arkansas Department of Elementary and Secondary Education (AR DOE); Household Pulse Survey (HPS); University of Arkansas Office for Education Policy (OEP) Arkansas parent poll.