Impact of School Funding Cuts on 8th Grade Math Scores (2000–2020)

Summary

This report investigates the impact of public school funding cuts on 8th-grade math scores in Arizona, Florida, Hawaii, and Indiana from 2000 to 2020. The hypothesis is that reductions in inflation-adjusted per-student expenditure have a negative impact on student outcomes. By analyzing historical trends in spending and standardized test scores, we identify instances where funding reductions coincide with declines or stagnation in student performance. Findings indicate that in Arizona and Indiana, reductions in school funding align with periods of slowed score improvements or declines. Hawaii and Florida exhibit more complex patterns where funding cuts do not immediately translate into score drops, suggesting that additional factors such as policy interventions or demographic shifts may influence outcomes. These insights reinforce the need for sustained investment in education to ensure consistent academic progress.

Context

Public school budgets fluctuate due to economic conditions, policy decisions, and changing federal and state funding priorities. While some states have maintained or increased educational investment, others have faced periods of budget reductions, raising concerns about their impact on student achievement. K-12 school funding is largely dependent/controlled at the state level within the United States. In this regard, in order to understand the impact of defunding, or lowering of funds afforded to public schools, on students there is a need to understand which states have lowered financial support for their respective public school systems. According to the *Adequacy and Fairness of State School Finance Systems* report, published in 2024, 39 states have devoted a smaller share of their economies towards public school funding compared to prior to the 2008 recession.[1] Of these 39 states, we can further outline seven states that have suffered abnormally large proportional losses from 2016 to 2021 in funding including: Hawaii (-27.8 percent), Arizona (-27.5 percent), Indiana (-26.8 percent), Florida (-24.9 percent), Michigan (-20.0 percent), and Idaho (-19.9 percent).[1] Essentially, had these states regained their respective pre-recession level funding efforts by 2016, their total state/local school funding between 2016 and 2021 would have been 20~28 percent higher. Furthermore, using fiscal effort as a measure of how much a given state's financial resources are put towards their respective K-12 educational systems, we are able to rank states in terms of their local/state expenditures as a percentage of gross state product. In terms of fiscal effort afforded to public schools the states with the lowest effort include: Arizona, Hawaii, Tennessee, North Carolina, Florida, Nevada, Idaho, Delaware, Utah, South Dakota, and Indiana.[1] These states provide under 3.1% of their fiscal effort to their respective K-12 public school systems.[1] Using these constraints we have identified a subset of states within the US that have placed particularly low funding towards public schooling (Arizona, Florida, Hawaii, and Indiana) and will therefore be the focus of further analysis.

This report focuses on the states of Arizona, Florida, Hawaii, and Indiana, due to them having the lowest level of financial support placed on public education across the US and evaluates the relationship between those cuts and 8th-grade math test scores. The goal is to determine whether funding reductions have led to noticeable declines in student performance

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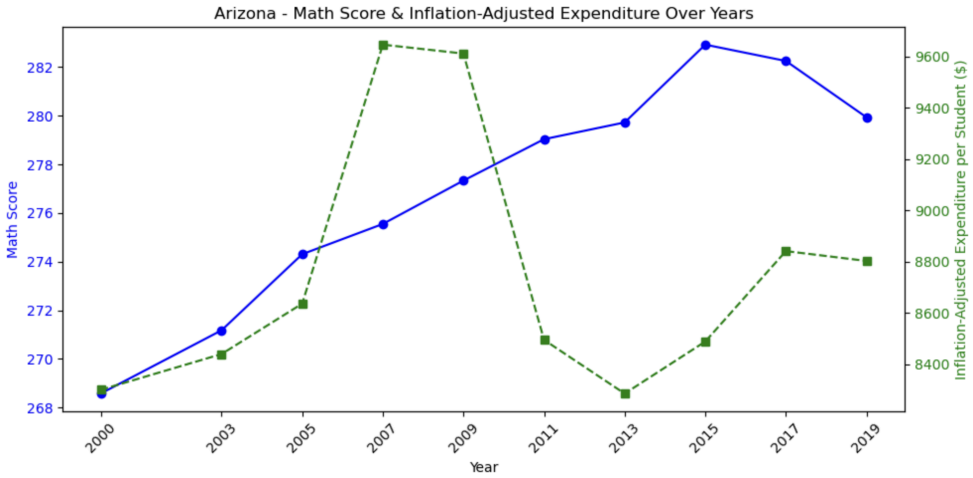
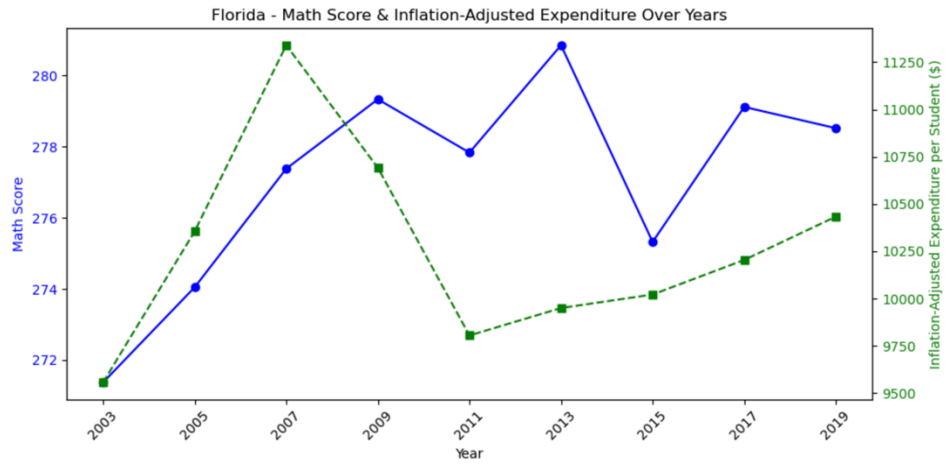
Analysis of Funding Cuts and Math Scores

Arizona



Inflation-adjusted per-student spending in Arizona experienced significant growth until 2007, reaching its highest point. However, following this peak, from 2009 to 2013, there was a sharp decline in funding, likely due to economic downturns or policy shifts. Although there was a partial recovery after 2015, funding levels ultimately never returned to their previous peak. During this same period, math scores demonstrated steady improvement from 2000 to 2015, despite minor fluctuations. However, in the years that followed, a noticeable decline in scores emerged after 2015, suggesting a potential lagged effect of the earlier funding cuts. This pattern implies that while educational investments may sustain performance in the short term, prolonged reductions in financial resources can eventually lead to lower student achievement. The sharp funding drop post-2009 clearly coincides with a slowdown in the rate of math score improvements, reinforcing the idea that resource constraints may have gradually impeded progress. Furthermore, the subsequent decline in scores after 2015 aligns with a period of stagnant or reduced funding, further supporting the hypothesis that funding reductions can have a delayed but adverse impact on student outcomes.

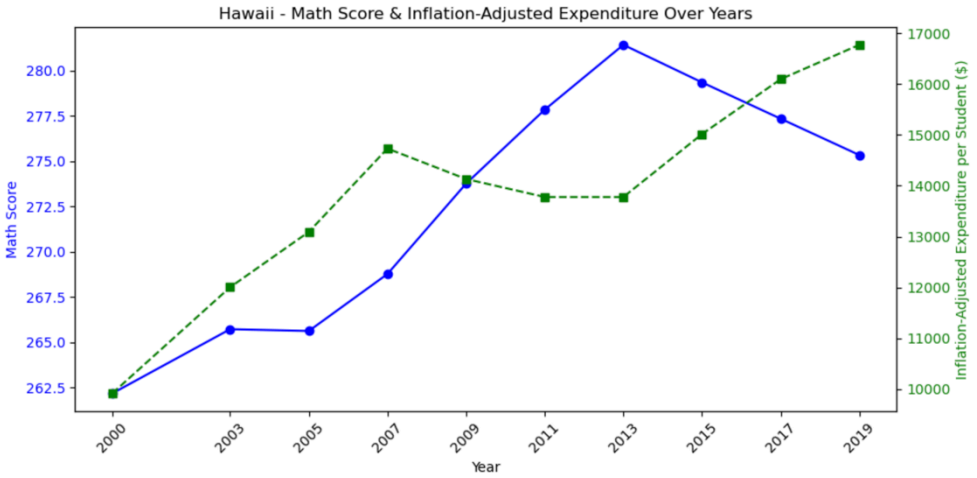
Florida



Between 2003 and 2007, Florida saw a steady increase in inflation-adjusted per-student spending, peaking around 2007. However, following this peak, from 2007 to 2011, funding experienced a significant decline before subsequently beginning a gradual recovery. Despite this financial setback, math scores continued to rise, reaching their highest point around 2013. Although there were fluctuations, math scores did not show an immediate decline following the funding cuts. Rather, they remained relatively stable, with a significant dip occurring after 2013. Notably, from 2015 until 2019, score growth slowed down, suggesting that while Florida

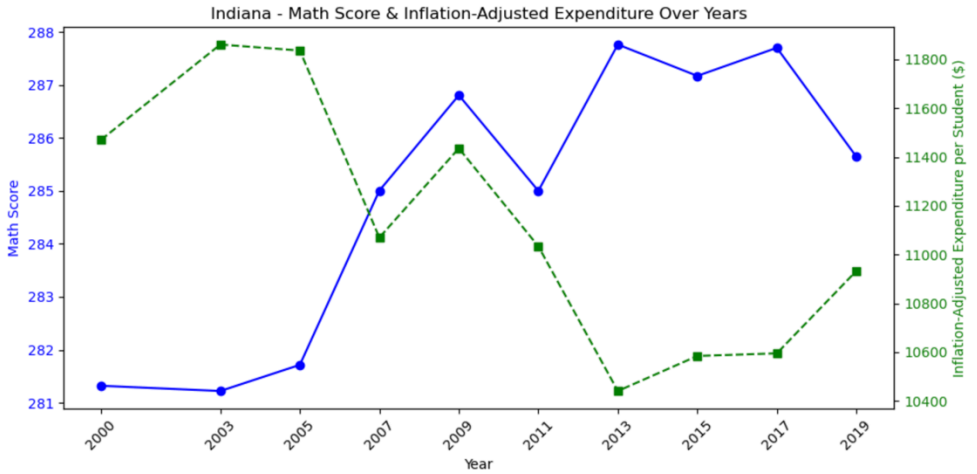
may have initially mitigated the impact of reduced funding, the long-term effects of financial constraints could have gradually contributed to this stagnation. This delayed response in score trends suggests that factors beyond direct funding - such as educational policies, teacher effectiveness, or curriculum changes - may have played a role in sustaining student performance. Nevertheless, the slower growth during the last four years reinforces the notion that financial resources are still a critical component in maintaining consistent academic progress.

Hawaii



From 2000 to 2007, Hawaii experienced a steady increase in inflation-adjusted per-student expenditure, reaching a peak before subsequently experiencing a slight decline. However, after 2013, funding showed a moderate upward trend, gradually increasing through 2019. This pattern suggests that, despite a temporary drop, overall investment in education was sustained over the long term. Similarly, math scores followed a comparable trend, showing consistent improvement until 2013. Nevertheless**,** after reaching their highest point around that year, scores began to stagnate and eventually showed a slight decline toward the end of the period in 2019. This shift indicates that, although funding continued to rise after 2013, it did not translate into continued academic gains. One possible explanation is that inefficiencies in how the additional funds were allocated or external factors may have affected student performance. Moreover, the decline in math scores after 2013 coincides with the period of slowed funding growth, further reinforcing the idea that continuous and well-directed investment is necessary to sustain academic progress. In particular**,** stagnating scores and a temporary dip in funding suggest that even minor financial setbacks may gradually impact student achievement in the long run.

Indiana



Between 2005 and 2013, Indiana experienced a decline in inflation-adjusted per-student expenditure, with particularly notable fluctuations around 2009. Following this period of reductions, after 2013, funding showed a moderate recovery, yet it did not immediately return to previous levels. This prolonged phase of budget reductions raises concerns about its potential impact on student performance. Initially, math scores remained relatively high until 2009, but shortly thereafter, a decline became evident over the next two years. Subsequently, between 2011 and 2017, scores fluctuated, showing instability rather than consistent improvement. Eventually, by 2019, a significant drop in scores occurred, further aligning with the prolonged period of reduced funding. The stagnation and eventual decline in student performance seem to correspond to a lag of about two years following the period of funding cuts. This trend strongly supports the hypothesis that reductions in financial resources negatively affect student outcomes, even though the full impact may not be immediate. Ultimately, the findings suggest that sustained and adequate investment in education is crucial to maintaining academic achievement and preventing long-term declines in performance.

Reasons for Public School Defunding

1. Recession and Tax Relief

The Great Recession from 2007 to 2009 triggered significant budget cuts within public education systems. To make up for revenue shortfalls, states slashed education budgets to balance the state budget.[2] At the same time, several states initiated tax relief measures in the form of property tax reductions, which decreased funding for public schools, as they depend on property taxes for funding.[2]

Tax relief bills lowering property taxes are still impacting public school funding today. For example, states like Indiana continue to cut property taxes through tax relief bills, which are estimated to cost Indiana public schools $1.8 billion in funding over two years.[3]

2. Private School Vouchers

The expansion of private school voucher programs is another significant factor slashing public school funding. Although initially designed to aid low-income families and students with disabilities, these programs have changed dramatically in recent years.[4] Following the COVID-19 pandemic, conservative lawmakers used public frustration over school closures and health mandates to push for more expansive voucher programs, which now include higher-income families.[4] Currently, 13 states are on track to have universally accessible voucher systems for all families in their respective states.[5]

These private school voucher systems impact public school funding in two ways. First, as more families use vouchers to enroll in private schools, public schools experience a decline in enrollment. This directly impacts funding, as schools receive money based on the number of students enrolled.[6] Second, to fund these expensive private school voucher systems, the public school budget is often used.[7] This trend leads to a decline in resources available for public school students, undermining the quality of their education.

3. Political and Ideological Motives

Underlying these financial challenges is an ideology from conservative politicians who aim to reduce government involvement in education.[8] They do this by supporting the movement toward school choice, which emphasizes parental rights and educational freedom while positioning public education as a target for cuts in favor of choice alternatives.[9] The Republican Party's platform also reflects a commitment to defund public

schools perceived as promoting "woke ideologies," such as critical race theory and "radical gender ideology," which they argue are inappropriate for students.[10]

In this context, efforts to dismantle public education are framed as increasing parental autonomy and choice, masking the underlying goal of defunding public schooling. As a result, the GOP favors voucher programs and tax cuts that slash public education funding.

Conclusion

This analysis supports the hypothesis that defunding public schools can negatively impact student math performance, though the effect is not always immediate. Arizona and Indiana show clear signs of stagnation or decline in scores following funding cuts, while Florida and Hawaii exhibit more delayed or complex relationships between funding and outcomes.

Sustained investment in education is crucial for ensuring consistent funding and preventing disruptions in student achievement. To maximize the impact of financial resources, states should focus on targeted resource allocation, directing investments toward teacher training, curriculum improvements, and student support services. These strategic efforts can help mitigate the negative effects of budget fluctuations and create a more stable learning environment. Additionally, implementing data-driven policy adjustments through regular assessments will enable policymakers to evaluate the effects of funding changes and make informed decisions to enhance student performance. Ultimately, a holistic approach that combines financial investment with evidence-based educational strategies will be essential for sustaining and improving student outcomes, even in the face of economic and policy challenges.

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Data Sources

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2. Test Scores for Schools: https://www.nationsreportcard.gov/ndecore/xplore/NDE
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