

Promoting Productivity: Lessons from Rural Schools

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May 2015

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A longstanding narrative persists when it comes to public education in rural school districts, a narrative that usually includes descriptors such as *expensive*, *lacking teaching talent*, and *poorly performing*. As traditional thinking goes, a rural school needs the same mix of staff as an urban school (a principal, counselor, chemistry teacher, and so on) but may have trouble luring good staff to rural communities.¹ And then, when dividing the salaries of these positions by the lower student counts, the lack of scale creates a higher cost per pupil in rural areas.² The result is a deficit mindset that permeates state education finance systems and may actually serve to reinforce the narrative of struggling rural schools.

An Edunomics Lab at Georgetown University analysis suggests that previous thinking on what rural districts need may be flawed.³ It is true that *on average*, rural remote districts live up to their reputation of providing lower returns on the education dollar. In fact, remote rural districts exhibit the lowest average return on investment (ROI) among different geographic types, meaning that even with their higher costs, the student outcomes are lower than the state's norm adjusted for the mix of student needs.

But those results don't tell the whole story. Parsing evidence on a state-by-state basis shows that another narrative may also be at play. Careful analysis of the full range of data reveals that some remote rural districts are actually outliers in that they are beating the odds by producing higher than expected results—and doing so without a higher per-pupil price tag. In other words, examining the relationship between spending and outcomes across all districts reveals that rural districts are occasionally the most productive, even when compared to their more urban peers. Studying these most productive districts—outliers because they get high outcomes for students at average spending levels or lower—reveals that being rural can actually be an advantage. State education agencies and leaders willing to examine rural education funding and ROI can extract opportunities to improve productivity across their state.

THE “COST” OF A RURAL DISTRICT IS DETERMINED BY THE STATE FUNDING FORMULA

Many state leaders point to economies of scale to explain the higher cost of small and rural districts. Conventional wisdom says lower population districts have a set of unavoidable “fixed costs” that drive up per-pupil spending when divided among smaller enrollments.⁴ These fixed costs might include the superintendent, payroll clerk, librarian,

nurse, counselor, physical education teacher, and other fixtures of public education. Add in costs for busing kids long distances to school and other transportation needs, and it makes sense that the per-student costs are higher in rural areas.

As a result, many states have structured their state education finance systems so that rural districts receive more funds per pupil than do their more populated or urban counterparts. According to a 2010 *Education Week* report, 29 states have an explicit “weight” in their state allocation formula to account for district size. Others fund staff, services, or programs to serve an entire district; therefore urban, more populated districts operate at a lower per-pupil cost and rural, lower-populated districts appear to cost more. Still others factor in population density, so low-density population rural districts receive even more funds.⁵

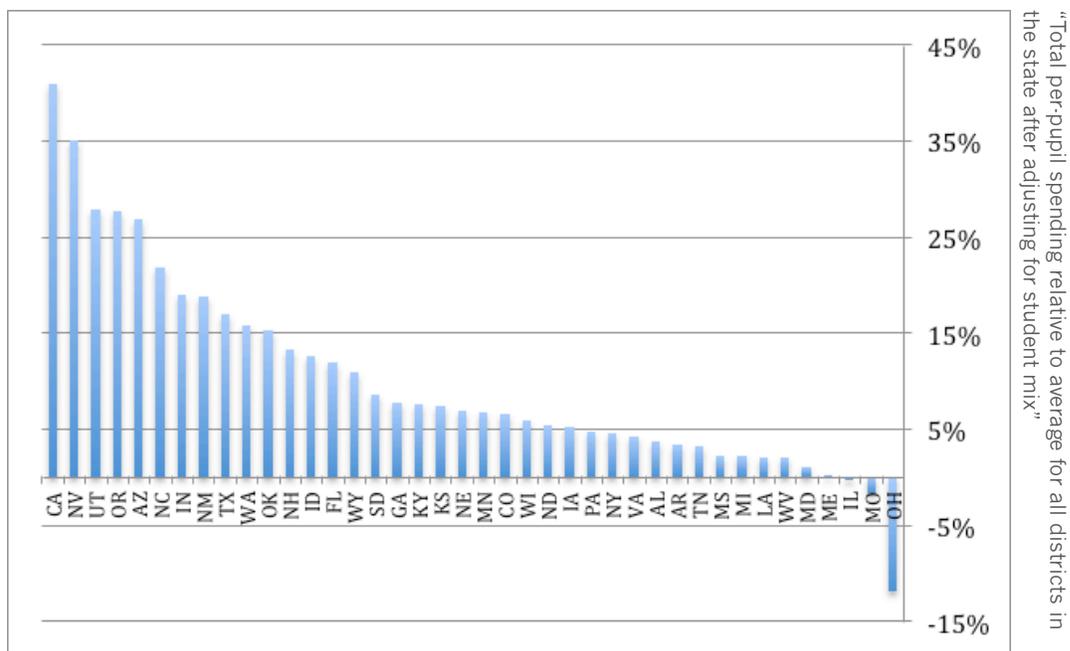
These higher spending levels are the product of state policy that assumes the need for a specific complement of staff in order to provide a specific set of services in a specific way. But the assumptions are just that—assumptions—and are not the only way to staff schools and serve students. For all districts, the “cost” of services is equal to the total funds provided. Therefore, when districts receive more revenues, the costs are higher. When they receive fewer funds, the costs are lower. Rural districts “cost” more when the state and local revenue structure allocates them more money. The question for state leaders is whether rural districts have any other options for delivery. As the data below indicate, options exist.

NOT ALL SMALL OR RURAL DISTRICTS “COST” MORE

Figure 1 focuses on a specific class of rural districts categorized by the National Center for Education Statistics (NCES) as “rural remote,” meaning the district is in a “census-defined rural territory that is more than 25 miles from an urbanized area and is also more than 10 miles from an urban cluster.”⁶ For this analysis, per-pupil revenues were adjusted for the mix of students served.

Most states have school finance systems in place that allocate higher per-pupil amounts to rural remote districts than the state average. In fact, 25 states allocate an extra 5 percent or more to remote rural districts than the state average.

Figure 1. Remote Rural Districts Receive Higher Allocations in Nearly All States



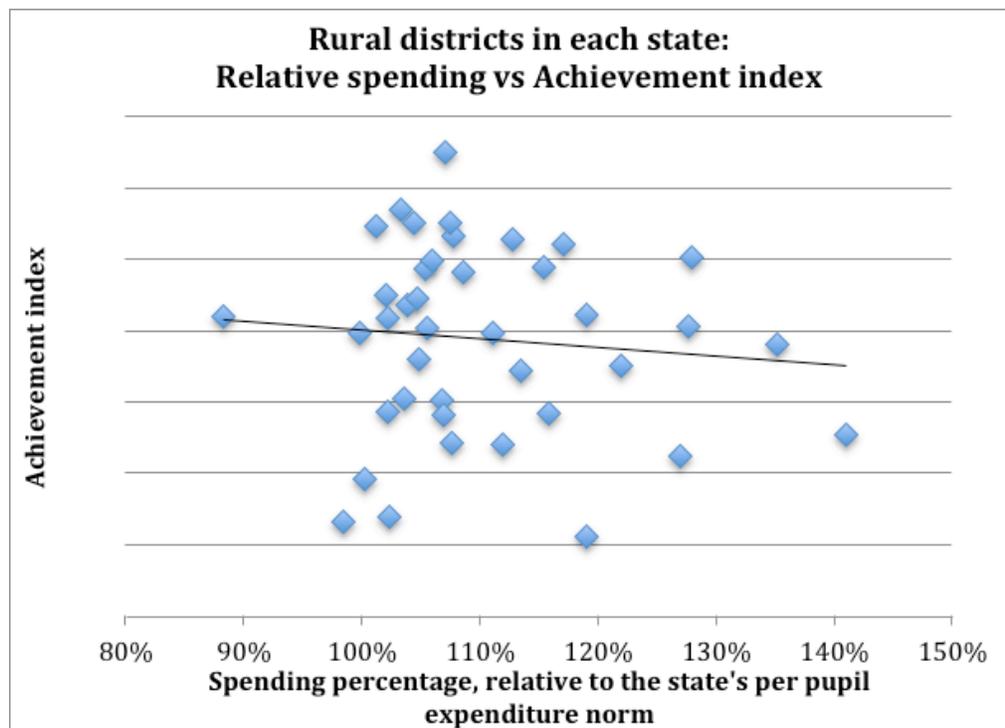
While the data do show that many states fund small and rural districts at higher than average rates, the scope of that subsidy varies substantially. Looking closer at state school finance systems, the total subsidy is often the result of a random aggregation of disparate funding policies, not a clear, strategic, or transparent finance strategy. District revenues are mostly a product of both state and local monies with both funding streams determined by myriad factors.⁷ A district’s state allocation may include some level of base (or foundation) funds, plus earmarked dollars for specific services or purchased inputs, plus a series of adjustments which may include hold-harmless amounts or grandfathering clauses. That said, in 14 states, rural districts receive within 5 percent of the state’s average (adjusted for the mix of students served) and a few operate with the same or lower level of per-pupil revenues as their larger, more urban peers. This finding suggests that not all rural districts cost more. And in fact, in these 14 states, costs are comparable.

RURAL DISTRICTS ON AVERAGE HAVE LOW ROI

Our analysis draws on a large-scale study by Ulrich Boser of the Center for American Progress (CAP) designed to measure the academic achievement a school district produces relative to its total spending (controlling for district demographics and cost of living factors.) The CAP dataset pairs 2008 data on current expenditures (excluding capital spending) with achievement data from the same year. The academic achievement data measures the percentage of students scoring proficient or above on state assessments in reading and math in the 4th, 8th, and 10th grades.

Figure 2 shows the results, with each dot representing a different state. Student outcomes in remote rural districts don't appear higher (adjusted for the mix of students) in states where those districts receive disproportionately more funds than their peers in the same state. In other words, where remote rural districts do receive more money than their peer districts, academic outcomes aren't any better on a relative basis. That said, it is important not to draw too many conclusions, as the data analysis leaves out many relevant variables. For instance, size, context, and geography of remote rural districts differ by state, as do those of their peers. And in states that regulate how services should be delivered in each district, the higher spending in districts might be better correlated with those state regulations than with student outcomes. But on the whole, overfunding remote rural districts doesn't seem to pay off in better student outcomes.

Figure 2. Poor Relationship Between Relative Spending and Relative Outcomes for Rural Remote Districts



SURPRISINGLY, REMOTE RURAL DISTRICTS ARE HEAVILY REPRESENTED AMONG THE HIGH RETURN ON INVESTMENT OUTLIERS

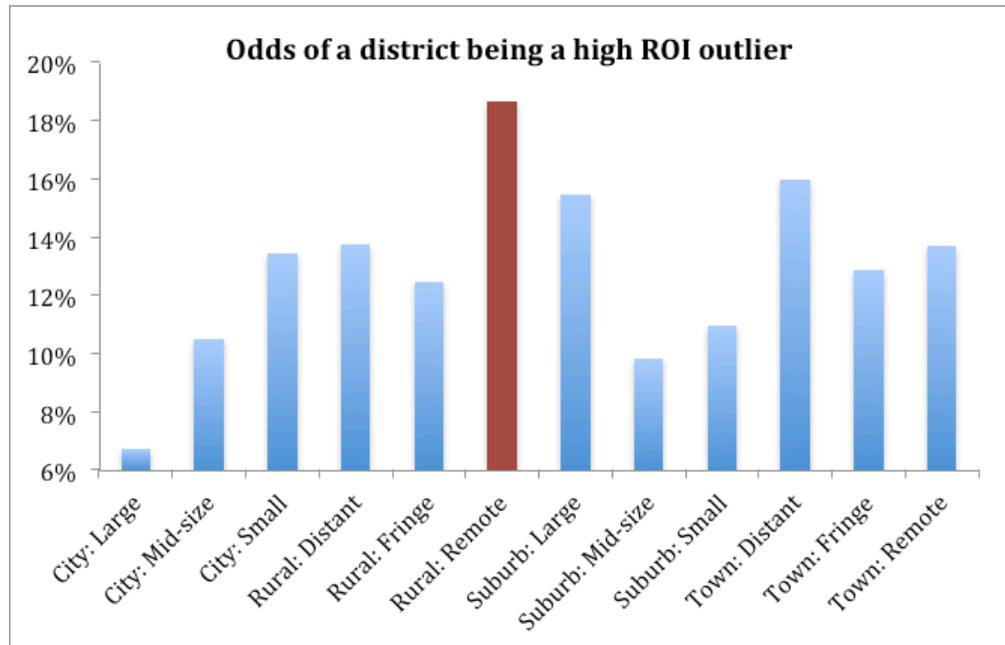
In order to explore the return on investment for rural districts relative to non-rural districts, we use CAP's "Production ROI index" for each district. To compute the index, the CAP analysis uses a regression equation to predict what achievement a district should have relative to other districts in the state given its mix of student needs and its spending level.⁸ Districts with the highest ROI scores are those where achievement beats expectations given current spending and demographics. With this index, districts with high-poverty students aren't clustered at the bottom of the achievement spectrum, as the achievement index adjusts for the mix of students in each district relative to the state norm.⁹ In this way, a moderately spending district with many poor students can rank high if its achievement levels exceed those typical of low-income students in the state.

The CAP analysis computes an ROI measure for each district, with the best overall scores given to those with the highest achievement (relative to their student mix) but with spending levels at or below the state norm. Consistent with common assumptions about remote rural districts, the data suggest that they have the lowest average ROI among any sector.¹⁰

Despite remote rural districts' overall low ROI, deeper analysis of the spending and outcomes data offers some promise for this sector. Specifically, while the average rural remote district produces a poor return on the dollar, outliers persist. In fact, examining distribution of the "super-high ROI" districts across all sectors provides a useful measure of what's possible. Super-high ROI districts boast the highest outcomes relative to the predicted outcomes based on spending and demographics within a given state.¹¹ Put simply, these super-high ROI districts are beating the odds.

It turns out that remote rural districts have the highest odds of being a super-high ROI district among all district types. As Figure 3 shows, distribution of super-high ROI districts varies across district types, but one in five remote rural districts is a high-performing outlier.

Figure 3. One in Five Remote Rural Districts Is a High ROI Outlier



BEYOND THE DEFICIT MINDSET

Why might so many remote rural districts pop up as productivity exemplars when the average remote rural district produces such lackluster outcomes? While the dataset alone doesn't provide us answers, building on these exemplars might mean capitalizing on the strengths that we know isolated rural communities have.

We might consider how isolation and smallness could foster conditions that increase the chances of education innovation, seeing these rural factors as opportunities instead of only deficits. Where districts don't have the need or capacity to implement large operational systems, perhaps they are better able to capitalize on the strength of specific staff or community. Or perhaps the personal relationships that can flourish in smaller settings between teachers and students result in increased student motivation.

Anecdotally, we hear how some are able to leverage their rural context to their advantage. One remote district strategically relies on key staff—the football coach and principal—to oversee student work in online courses, ensuring students stay on track toward completion. In another district, schools are closed on Wednesdays to save on transportation funds, but students are assigned substantial homework on those days to keep up learning. A district in Hagerstown, Indiana, responded to shrinking student enrollment by adding hands-on agricultural classes in which its own students raise cattle, supplying cheaper, healthier food for the school cafeteria. In addition to reducing district costs, leaders expect to cultivate local agricultural talent to preserve this farming community.¹²

We know some rural districts purchase services from other providers and may be more effective in their role as contractors than direct providers. For example, one rural high school that couldn't offer a full complement of on-site electives had been using online classes for years during the school day to create more student offerings. In a different remote district, officials contracted with a personal trainer to work with students in lieu of hiring a full-time PE teacher.

Perhaps these super-high ROI districts are beating the odds because they tap the local ingenuity long thought to be part of the rural mindset in order to meet students' most pressing needs. It is possible that the very smallness of a district allows it to be more nimble, making micro-adjustments in reform efforts on a more regular basis. Moving beyond the deficit mindset may allow more rural districts to convert factors that have traditionally been viewed as constraints or limitations into strengths and opportunities. However, without additional study of the causes of success in the super-high ROI rural districts, we can only speculate.

THE OPPORTUNITY FOR STATES

This research challenges many long-held policy assumptions about rural schools. It challenges the assumption that rural schools must offer services in the same way as more densely populated regions, as current state funding formulas often imply. It challenges the notion that because isolated rural districts often suffer from a talent gap, they can't produce outcomes as high as other districts without vastly more money. And it challenges the push for district consolidation, as such moves might inhibit the very conditions that currently make super-high ROI results more likely in isolated rural districts.

The findings have important implications for state finance policy. Where states hope to get better outcomes in rural districts, leaders might move away from the notion that what's been learned in more populous regions ought to be imposed on rural settings. Rather, states might enable rural districts to harness their communities' independent, nimble, and entrepreneurial spirit, empowering them to innovate toward improving services in the context of limited resources.

To foster innovation and improve ROI in rural communities, states might consider the following:

- **Developing information systems and training opportunities to identify high ROI districts and allow for learning across all districts.** Sharing productive and innovative practices across districts will allow local leaders to pick and choose strategies or elements that may work in their community.

- **Allocating funds based on students and student characteristics.** Staffing expectations, cost reimbursements, or other input requirements constrain decisions for rural communities.
- **Eliminating specifications around service delivery.** Each rural community has different resources available and different constraints. Allowing these districts to create service delivery structures that take into account local schedule preferences and maximize locally available resources may provide a higher ROI.
- **Promoting shared services across districts, instead of consolidation.** Consolidating rural districts may impede a district's ability to be innovative, nimble, and more highly productive. Where districts lack productivity, districts might instead seek efficiencies by sharing services across districts, while maintaining flexibility.
- **Providing innovation grants to promote redesigned delivery models that enhance ROI.** To challenge the status quo, small injections of innovation seed funding may help rural district leaders create new strategies that reduce current costs and positively impact ROI.

For states, the opportunity is clear. Rather than viewing rural districts as the expensive, low-performing portion of a state's education system, states might see these districts as engines of innovation. In this mindset, states can empower these districts to innovate toward improved services in the context of limited resources and might then uncover new delivery models that could serve as exemplars not only for rural schools, but for all the state's schools.

ENDNOTES

1. Lenay Dunn, *Urban and Rural Staffing Challenges* (Sacramento, CA: Center on School Turnaround, 2013).
2. J.A. and Kathryn Albertson Foundation, *Five questions about education funding in Idaho. The ReThink Series* (Boise, ID: J.A. and Kathryn Albertson Foundation, 2014).
3. Edunomics Lab analyzed data provided by Center for American Progress. See citations in analysis later in this chapter.
4. J.A. and Kathryn Albertson Foundation, *Five questions about education funding in Idaho*.
5. Amy M. Hightower, Hajime Mitani, and Christopher B. Swanson, *State Policies That Pay: A Survey of School Finance Policies and Outcomes* (Bethesda, MD: Editorial Projects in Education, 2010).
6. Identification of Rural Locales, National Center for Education Statistics, www.nces.ed.gov/ccd/rural_locales.asp.
7. Federal monies account for roughly 12.5% of a district's total revenues. Revenues for public elementary and secondary schools, by source of funds and state or jurisdiction: 2010-11, National Center for Education Statistics, www.nces.ed.gov/programs/digest/d13/tables/dt13_235.20.asp.
8. Ulrich Boser, *Return on Educational Investment* (Washington, DC: Center for American Progress, 2011): 22.
9. The CAP report provides three different indices, each of which has been critiqued for its shortcomings (see for instance, Bruce Baker, *Deficiencies and Misinterpretations in the Center for American Progress Method for Measuring and Comparing School District Return on Investment* (Boulder, CO: National Education Policy Center, 2011). This analysis selects the production ROI index from the three because it adjusts expectations for achievement based on each district's demographics.
10. One of the critiques of the ROI measure is that it doesn't adjust for district size or sparsity, which allows us to see how rural districts then compare.
11. The regression model used by the CAP study adjusts for spending level and the percentage of students in free lunch, special education, and bilingual education. See Boser, *Return on Educational Investment*.
12. Steven Yaccino, "A Lesson in Farming, Classroom to Cafeteria," *New York Times*, May 11, 2014.