REAL ESTATE CENTER
TEXAS A&M UNIVERSITY

Adding It Up
Texas Home Values & School Quality

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March 11, 2019

Publication 2229

Homebuyers have much to consider when purchasing a home. How much home can they afford? How long will the commute be? Which home and neighborhood amenities are they willing to pay for or sacrifice? The impact of local schools is high on the list. Regardless of whether a homeowner has school-aged children, consideration is still important because of school taxes imposed on the property and how they could affect potential resale. Unlike with most public services, consumers can see school-related costs on their property tax bill and view the tangible results.

Does school quality matter in the home-buying process? The short answer is "yes." Numerous studies have shown school quality contributes to higher home values. The bigger question is how much does school quality influence home prices when other variables are brought into the picture?

Schools, Home Prices, and Taxes

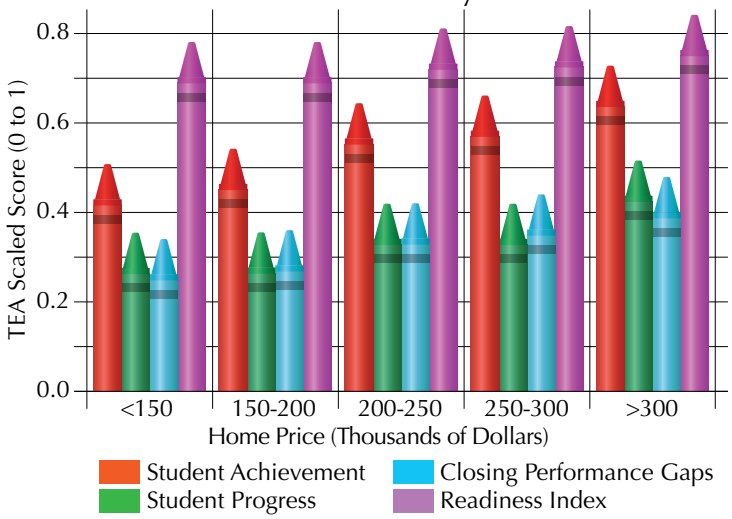
To find the answers for Texas, look at district-level housing data alongside data from the Texas Education Agency (TEA), which includes school district financials and accountability scores (Figure 1). TEA provides four different accountability scores that measure various aspects of school district effectiveness. For this study, school accountability is the same as school quality.

The Takeaway

The quality of schools in an area is a major consideration for many potential homebuyers. While studies show school quality impacts home values, the extent of its impact depends on a wide range of related variables.

Grouped by price cohort, some metrics increase more noticeably than others. For example, "Student Achievement" begins at an indexed score of 0.51 in the "$150s and Less" price cohort and ends with 0.73 in the "$300s and More" cohort. "Postsecondary Readiness," on the other hand, changes little, comparatively, between the same two cohorts. Interestingly, while the "$300s and

Figure 1: Median District Home Prices and TEA Accountability Scores



Student Achievement. Snapshot of performance across subjects.
Student Progress. Year-to-year student progress.
Closing Performance Gaps. Academic achievement of economically disadvantaged students and the two lowest-performing racial/ethnic student groups.
Postsecondary Readiness. How prepared students are for college, job-training programs, the workforce, or the military.

Note: Home prices come from 924 school districts throughout the state. School data are from the 2016–17 school year while home prices are from 2018 sales (assumes 2018 purchases would have been made with 2016–17 school data).
Sources: TEA, Real Estate Center at Texas A&M University, and 2017 Accountability Manual for Texas Public School Districts and Campuses

More" cohort contains the highest overall school quality scores, the variation across all cohorts is relatively high (Table 1). This is because of the student base's wide economic range. For example, some urban school districts have higher home prices than others but also a relatively higher proportion of economically disadvantaged students.

Higher home values also mean higher property taxes. Tax rates can vary considerably between school districts, cities, and other taxing entities. Overall, local school taxes make up a significant portion of the property owner's tax bill and are a major source of funding for public education.

No conversation about Texas public education funding would be complete without mentioning the state's school district refinance program, known to many as the "Robin Hood" program. The program aims to equalize school funding by diverting tax dollars from property-tax-rich school districts to property-tax-poor school districts.

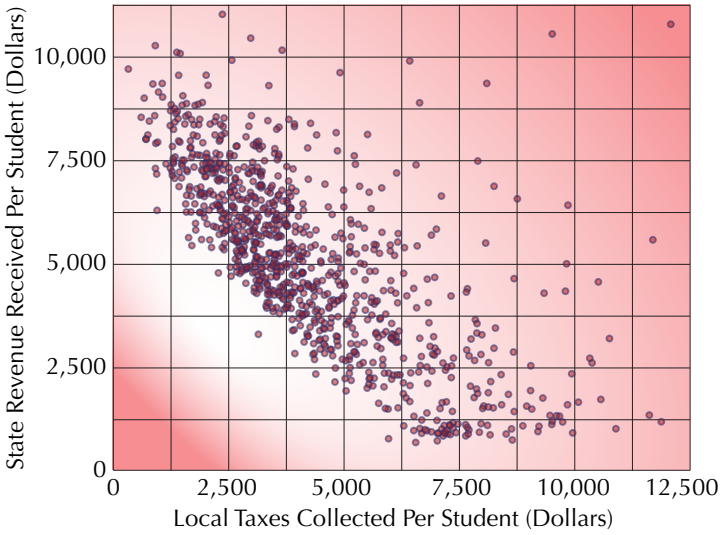
TEA data about the Robin Hood program are limited to school districts that pay into the program. In addition, cash-flow data strictly for Robin Hood funds are not tracked. Rather, TEA tracks the entire funding pool that is redistributed back to school districts. This includes Robin Hood and other state funding. The relationship between state funds and local funds collected by school districts is shown in Figure 2. As designed,

Table 1. Statewide School Quality Variation by Home-Price Point

Price Group	Student Achievement	Student Progress	Closing Performance Gaps	Postsecondary Readiness Index
	Standard Deviation			
$150s and Below	0.15	0.14	0.12	0.14
$150s to $200s	0.13	0.14	0.12	0.11
$200s to $250s	0.14	0.13	0.12	0.12
$250 to $300s	0.14	0.15	0.12	0.14
$300s and Above	0.17	0.20	0.17	0.18

Note: Higher standard deviation indicates more variation in scores. Lower indicates less.
Sources: Texas Education Agency and Real Estate Center at Texas A&M University

Figure 2. State, Local Funds Collected Per School District, 2017



Sources: Texas Education Agency and Real Estate Center at Texas A&M University

districts with higher local tax resources tend to receive less from the state.

The Robin Hood program creates a disconnect between what homebuyers would potentially pay in school property taxes and how much funding their school district would ultimately receive. In recent years, this has caused increasing ire as home values and, subsequently, property taxes in Texas have grown rapidly.

Also, despite the state's redistribution of funding, the amount collected in local taxes or spent on student instruction does not relate as strongly to school quality as home prices do.

Factoring in additional socioeconomic data from TEA helps identify these relationships even further. For example, TEA data include the proportion of students within school districts who are considered economically disadvantaged. Although a broad measure, it can provide a useful proxy for the economic makeup of school districts. Combining home price, school quality, finances, and socioeconomic data paints a better picture of how everything ties together.

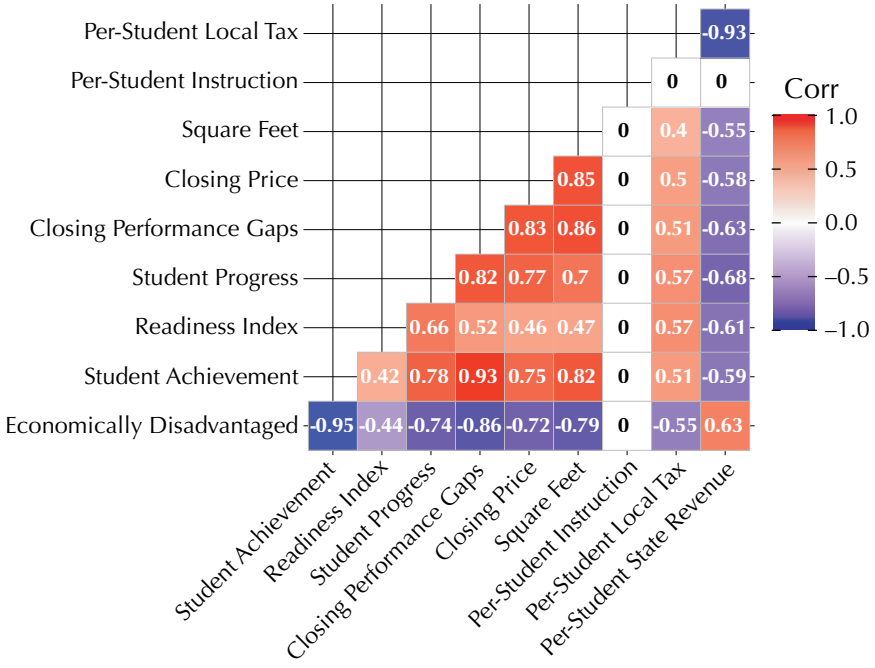
Austin: A Case Study

While many of the relationships between variables remain consistent at the state level, regional analysis allows for a clearer and more intuitive interpretation of results. As a case study, school districts within the Austin-Round Rock Metropolitan Statistical Area (MSA) were analyzed. This MSA has been in the middle of the Texas housing boom in terms of accelerated price and property tax growth and resulting housing affordability issues.

The correlation between several key variables for Austin-Round Rock is shown in Figure 3. Correlation is a basic measure of how one variable relates to another. Variables can move in opposite directions, denoted by negative values; the same direction, positive values; or no clear direction, anything close to zero. The strongest possible positive relationship is 1 while the strongest negative is –1. In the chart, red indicates a direct or positive correlation while blue indicates an inverse or negative correlation. White signifies little or no correlation.

Starting with housing characteristics, higher median district home prices tend to relate positively with each of the four school quality measures. The same is true of square footage, which makes sense since home price

Figure 3: Austin School District Correlations



Sources: Texas Education Agency and Real Estate Center at Texas A&M University

Table 2. Austin School District Metrics by Home-Price Category

	School District Count	Sales	Price PSF	Days on Market	Square Feet	Close to Original List Price	Students	Instructor per Student	Student Achievement	Student Progress	Closing Performance Gaps	Readiness Index	Economically Disadvantaged
Above Median	8	727	$165	43	2,424	96.9%	7,049	4,651	86	43	45	82	21%
Below Median	19	267	$130	30	1,691	97.2%	3,191	4,845	71	36	34	73	63%
State	924	43	$94	49	1,773	95%	1,034	4,938	75	38	40	77	59%

Sources: Texas Education Agency and Real Estate Center at Texas A&M University

and home size often go hand in hand. The two measures are also positively correlated with higher local taxes per student and lower state revenue per student. This fits in with how the state public education financing system works.

The proportion of economically disadvantaged students within the school districts reveals fairly strong negative relationships with both home price and size. This is not surprising considering the restricted range of available housing options for students in lower-income households. However, this also suggests school districts with a higher proportion of economically disadvantaged students tend to have lower TEA ratings for accountability.

Given these general relationships, what implications could be derived for either the existing homeowner or potential homebuyer? One major implication involves the state's rising housing affordability problem, which is particularly troublesome in Austin. Does the quality of school help or hurt housing activity?

In 2018, Austin's median home price was $306,498. Table 2 groups districts below and above that median threshold and compares various housing and school-related attributes. In addition, state measures are provided as a comparative benchmark.

Even accounting for Austin's higher-than-state-average income, the median price in 2018 was a steep barrier for many households. Of the MSA's 27 school districts, eight include homes priced above the overall median price. Sales volume per district and school size are also considerably larger, indicating denser student populations.

Real estate market conditions appear tighter in school districts priced below the median price. Median days on market is comparatively lower, and the difference between what sellers ask for and what they get for their homes is narrower. Homes also tend to be smaller, and district student counts are smaller.

School districts grouped above the median price correlate more positively to accountability scores than the state and school districts priced below. The latter correlates to below-the-state levels for all four accountability metrics. This could mean current demand in lower price ranges remains strong despite below-average school performance.

If a homebuyer can't buy a home above the median price—and, therefore, access the top schools—can instruction costs be used as an alternative variable to pick good schools within their budget? TEA generally defines instruction expenses as those associated with activities directly between teachers and students. Instruction expenses make up the largest operating expenditure category, ranging in the 50 to 60 percent range of total expenditures for most schools. This category does not include athletics, extracurricular activities, or other auxiliary services.

Instruction expenses per student relates neither positively nor negatively to the factors previously mentioned (Figure 3). This applies not only to Austin but to the other major Texas metros as well. To potential homebuyers, instruction funds spent on their children may end up being a near nonfactor in the homebuying decision.

Correlation, Not Causation

Finding associations is one thing, but identifying what causes what is another.

For example, the analysis does not indicate that student achievement causes larger homes. More accurately, it shows that higher student achievement tends to correspond with larger homes at higher prices. The addition of variables such as percent of economically disadvantaged students reveals another major dimension to the home-buying process. The underlying "cause" may be something not even measured, such as household financial resources.

Future analysis identifying causal relationships to home price may be most effective with a comprehensive set of variables including home characteristics, school quality, and neighborhood attributes.

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