



**SOUTH TEXAS
ECONOMIC
DEVELOPMENT
C E N T E R**



Economic Pulse

Closing Income Gaps with Education

by Jim Lee

HIGHLIGHTS:

Survey data show that youth who grow up in areas with more manufacturing are more likely to finish high school and college. In regions with more degree-intensive employment, children born to parents without college education are more likely to be college graduates. Simple calculations indicate substantial returns on public funding for human capital investment that may reduce the region's educational and income gaps.

Read this article online at stedc.atavist.com. This article benefits from remarks of Mr. Joe Adame, former Corpus Christi City Mayor.



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Persistent income inequality is one perplexing socioeconomic issue of South Texas. Improving upward mobility among children of low-income families is widely perceived as a way to close the income gap between the rich and poor over different generations. College education is considered to be the most effective factor to raise young people's ability to move up the economic ladder or to exceed their parents' standard of living.

At the regional level, educational attainment, which affects workforce skills and quality, is also a key determinant of economic competitiveness. On the other hand, the relationship between educational outcomes and long-term economic development for a region is a virtuous (or vicious) cycle as these two factors tend to affect each other over time.

To illustrate this point, this article first summarizes the findings of a recent study on the effect of a region's industrial composition on the educational attainment of youth in low-income families. The article also illustrates conceptually how regional income gaps with the nation can be closed with increased public investment in college education for local residents.

Industrial Mix and Education

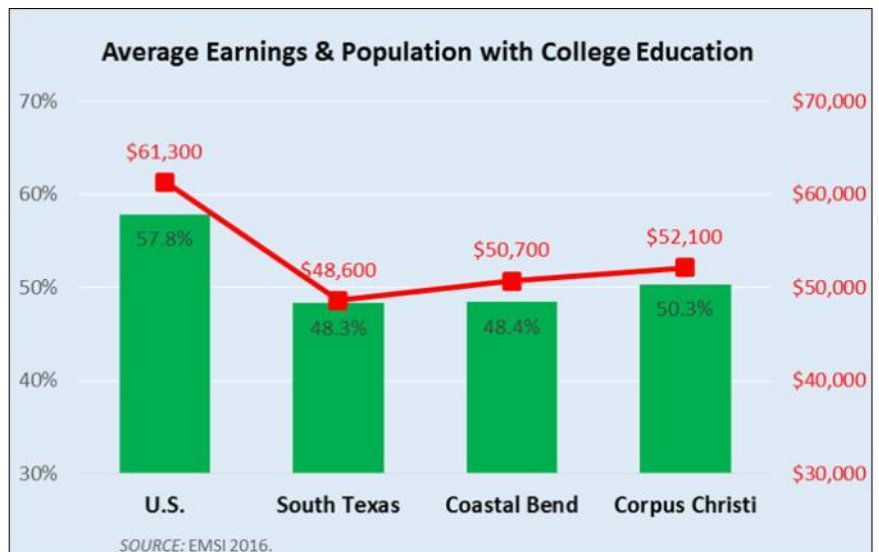
A recent study of Stephan Whitaker, an economist at the Federal Reserve Bank of Cleveland,

analyzes the effect of a region's industrial mix on the educational attainment of children whose parents do not have a college education. He focuses on manufacturing and college-degree-intensive industries. Historically, manufacturing jobs tend to pay relatively high wages to workers without college degrees.

The share of manufacturing employment has historically declined across the United States as scores of manufacturing jobs have been outsourced to other nations, notably China. This employment share declined from about 25 percent in 1970 to less than 12 percent today.

Meanwhile, the number of occupations requiring a college degree has risen. The total employment share of industries that hire relatively more college graduates grew from about 25 percent to nearly 35 percent today. Degree-intensive industries include education, healthcare, finance, and real estate.

There are numerous reasons that a region's



Educational Attainment of Adults 25 and Over, 2016

	U.S.	South Texas	Coastal Bend	Corpus Christi
Less than High School Diploma	14.3%	25.1%	22.3%	20.9%
High School Diploma	28.0%	26.5%	29.4%	28.8%
Some College	20.7%	21.3%	24.0%	24.3%
Associate Degree	7.9%	6.7%	6.7%	7.0%
Bachelor's Degree	18.2%	13.5%	11.2%	12.0%
Graduate Degree and Higher	11.0%	6.8%	6.5%	7.0%

SOURCE: EMSI.

industrial composition might affect educational outcomes. First, a region with more high-paying manufacturing jobs that require less education has higher opportunity costs for students to stay in school. Indeed, anecdotal evidence suggests that the shale oil boom between 2009 and 2014, which spurred regional employment growth, reduced educational attainment in South Texas during that period (*Economic Pulse*, 2015 Issue 2).

Alternatively, rapid growth of any industry might raise the region's education attainment level though its effect on local tax revenues. Higher tax revenues typically result in higher spending by school districts and higher subsidies for public colleges and universities. From this perspective, we might expect a positive relationship between the region's educational attainment and its regional share of manufacturing industries or the degree intensity of local industries.

Based on longitudinal survey data, Whitaker at the Cleveland Fed finds that children who grow up near degree-intensive industries are more likely to attain a college degree. Wage premiums motivate students to finish college. Similarly, there is a positive relationship between a region's manufacturing employment and the local high-school completion rate, particularly for youth born to parents without college education. These positive correlations are consistent with the notion that both degree-intensity and manufacturing industries provide additional funding for local schools.

Policy Tradeoffs

Those findings have strong implications for regional economic development programs. Local policymakers often face the decision to facilitate the devel-

opment of alternative industries through tax credits and other incentives. Expanding traditional manufacturing industries tends to immediately raise employment particularly for individuals without a college degree. Alternatively, expanding degree-intensive industries will attract more educated workers to the region.

If raising high school completion is a priority, then policymakers should focus on manufacturing industries. If raising college attainment is a priority instead, then more resources should be directed toward degree-intensive employment.

Educational Gaps

Those findings also raise the question concerning the size of educational gaps in our region. The table on the top of this page compares the educational attainment levels of the U.S. adult population against those in South Texas. The South Texas region consists of 41 counties south of San Antonio. It is clear that this region lags behind the rest of the nation in educational attainment, particularly in the completion of college degrees.

The share of population without a high school diploma is remarkably higher across South Texas and the Corpus Christi metro area than the national average of 14.3 percent. Also, the share of college degree holders is much lower in South Texas than the U.S. In Corpus Christi, less than 20 percent of local residents have completed college, as opposed to nearly 30 percent for the nation as a whole. The educational

attainment levels of other communities in the Coastal Bend region are even lower.

The chart on the previous page shows the relationship between educational attainment and income earnings. The columns show the shares of population with at least some college education. Nearly 58 percent of the adult population in the U.S. has some college-level education or has a college degree. The college-educated population share falls to about 50 percent for Corpus Christi and even lower at 48 percent for South Texas.

The correlation between college education and employee earnings is also apparent in the chart. Annual earnings of employees in the United States average at \$61,300 today. By comparison, the average annual income is about 15 percent lower at \$52,100 for employees in Corpus Christi, and about 20 percent lower in the broader South Texas region. A higher average income level is associated with a higher educational attainment level.

Higher Education Institutions

How much does it cost to close the observed educational gaps of South Texas? To address this question, let's first look at the average expense for enrolling each student in the region's universities and community colleges.

Major universities in South Texas are University of Texas Rio Grande Valley, and Texas A&M Universities in Corpus Christi and Kingsville. The region's major community colleges are South Texas College, Coastal Bend Community College, and Del Mar College. Current student enrollments total nearly 50,000 among the three universities, and about 47,300 among the three community colleges.

Using those institutions' operating budgets as the basis for calculating actual education expenses, it costs slightly less than \$16,000 on average to enroll one university student in the region this year. The average annual cost to

South Texas Higher Education Institutions, 2016

	Enrollment	Budget	Expense/student
Universities	49,707	\$794 million	\$15,974
Community Colleges	47,280	\$267 million	\$5,647

SOURCES: Various.

Return on Investment to Close Educational Gaps

	South Texas	Coastal Bend	Corpus Christi
Degrees Needed to Close Gap	269,318	44,828	30,389
Costs to Close 4-Year Degree Gap	\$17.2 billion	\$2.9 billion	\$1.9 billion
Graduate Lifetime Earnings Gains	\$138.2 billion	\$23.0 billion	\$15.6 billion
ROI Ratio	8.0	8.0	8.0

SOURCES: Payscale.com, and author's calculations.

enroll a student in a regional community college is much lower around \$5,600. Because expenses for public college education are subsidized through tax dollars, the tuitions paid by students do not fully capture all expenses incurred by those universities and colleges.

Although universities in South Texas incur higher expenses per student than community colleges within the region, their returns or so-called wage premiums are substantially higher. According to the latest estimates of Payscale.com, the 20-year annual rate of return for a bachelor's degree is 10 percent among graduates of A&M-Kingsville, 8.9 percent among graduates of A&M-Corpus Christi, and 5.2 percent among graduates of UT Rio Grande Valley. These so-called return-on-investment (ROI) ratios take in consideration of the missed wage earnings for students in college and the tuitions paid for four years.

Such return estimates can be used to compute the impact of a degree on the graduate's lifetime earnings. For instance, a bachelor's degree generates additional lifetime earnings of \$1 million for a typical A&M-Kingsville graduate, and \$0.8 million for a typical A&M-Corpus Christi graduate.

ROI for Human Capital Investment

The table below presents the total costs and benefits for the region to close its educational gaps with the nation. If South Texas is to match the national average of 29.2 percent in the population share of university degree holders, then the region would need close to 270,000 more college graduates. This means that regional university enrollment would increase fivefold. Similarly,

the Coastal Bend region would need to add nearly 45,000 degrees, and the Corpus Christi metro area would require some 30,000 more degrees.

Given the actual expenses for enrolling college-level students, it would require over \$17 billion for the entire South Texas region to raise its population share of degree holders up to the national level. Such costs for closing the region's educational deficiencies seem prohibitively high. But after taking into account the lifetime income gains of nearly \$550,000 for a typical university graduate in South Texas, the benefits of a college education far outweigh the costs. Based on some back-of-the-envelope calculations, the ROI ratio for closing the region's college-level educational gap equals 8. This means that one dollar of public funding for college education would eventually raise the income earnings of the region's residents by \$8.

Caveats

The objective of the above analysis is simply to highlight the importance of improving the region's educational attainment as a means to raise its overall standard of living. The extent of benefits from investing in public education would most likely be smaller than our estimates for a variety of reasons. For instance, more educated people tend to be more mobile geographically. The impact on local wage earnings will diminish if our college graduates move out of the region.

Also, if more college degree holders enter the local labor markets, the wages for jobs requiring a college degree will tend to fall. Nevertheless, the net re-

turn on human capital investment will most likely remain positive even for a local community.

55K Degrees for Louisville

Despite the clear relationship between a community's education attainment and its quality of life, the potential "brain drain" issue is one reason for the lack of concerted public commitment to raising local educational attainment beyond the secondary or associate degree level. One rare community-level initiative is the public-private partnership of Louisville, Kentucky.

Created in October 2010, the Greater Louisville Project (55000degrees.org) aims at adding 40,000 bachelor's degrees and 15,000 associate degrees, or a total of 55,000 postsecondary degrees, by 2020. This 55K Degrees Partnership has been funded through donations of local and national sponsors, including the Lumina Foundation.

Has this Louisville initiative made a difference? The table below shows that the Louisville metro area indeed added nearly 26,000 postsecondary degrees since 2010. The increases in the local shares of adult population with associate and bachelor degrees have also outpaced the national averages.

By comparison, the population of the Corpus Christi metro area is about two-third smaller. Like Louisville, more of Corpus Christi's local residents earned a college degree during that same period between 2010 and 2016. Unlike Louisville, the share of this more educated population in Corpus Christi lagged behind the rest of the nation. The share of local population with a bachelor's degree has in fact dropped by nearly one percentage point since 2010.

References

Jim Lee, "Payoffs of Advanced Training and Resource Curse," *Economic Pulse*, 2015 Issue 2.

Jim Lee, "Corpus Christi by the Rankings," *Economic Pulse*, 2016 Issue 7.

Stephen Whitaker, "Manufacturing or Degree-Intensive Labor Markets: Where Do the Children of Non-College Graduates Earn More Degrees?" Federal Reserve Bank of Cleveland, *Economic Commentary*, Number 2016-12, October 6, 2016.

Postsecondary Educational Attainment Of Adult Population 25 or Older

	Louisville			Corpus Christi		
	Change 2010-16	% Population		Change 2010-16	% Population	
		2010	2016		2010	2016
Associate Degree	6,086	7.1%	7.4%	2,485	6.6%	7.0%
Bachelor's Degree or Higher	19,757	25.8%	26.6%	1,799	19.9%	19.0%

SOURCE: EMSI.



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