Corpus Christi and Coastal Bend
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Resurgence of an Industry

By Jim Lee

The Coastal Bend is undergoing an industrial renaissance. A construction boom led by a record number of industrial capital projects is generating a surge in demand for construction labor and craft skills. Once completed, those large-scale industrial facilitates will generate a permanent gain of industrial manufacturing employment, reversing the historical trend of that sector.

An industrial renaissance is emerging in South Texas. This transformation will likely promote a prosperous future for its regional economy. After a decade long decline in oil and gas related employment due in part to falling energy prices and rising productivity in the industry, the impact of the oil boom in the Eagle Ford Shale formation, only 70 miles north of Corpus Christi, has now rippled through much of the Coastal Bend. Most popular studies about the economic impacts of the Eagle Ford to date have largely underestimated one major development in Corpus Christi, namely the rise of the manufacturing sector.

Following the national trend, the local manufacturing sector has undergone an extended period of declines as production has been outsourced overseas to notably China and other emerging economies around the world. Between 2001 and 2014, the Coastal Bend lost about 2,400 manufacturing jobs, and the share of the manufacturing sector in total regional employment reduced from 6.6 percent to 4.5 percent. Most of those job losses were offset by gains in service-oriented employment. That declining trend is about to reverse in the Coastal Bend though. Industrial manufacturing is emerging as the fastest growing economic sector, especially in Nueces and San Patricio counties.

Construction Boom

Access to Eagle Ford shale oil and gas through trucks and pipelines, and the logistical advantage of a deepwater port have made Corpus Christi an attractive location for developing heavy manufacturing plants and petrochemical facilities. Along with a rapid recovery of real estate market, the Coastal Bend is in the midst of a construction boom. The current boom can date back to 2011 when Tianjin Pipe Company (TPCO) of China began its construction of a $1 billion steel mill, which will produce seamless steel pipes. The plant is expected to become operational by 2015, when it enters the second phase of development. The TPCO project was followed by an unprecedented number of new construction plans, including an iron plant by the Austrian Voestalpine Group, the Italian M&G Group's facility that will produce PET resin, and Switzerland-based Trafigura's terminal and oil storage facilities.

Major Industrial Development Projects, 2014-18

Company	Facility	Investment ($ Million)	Operation Year	Construction Timeline 2014	2015	2016	2017	2018
TPCO	Steel Mill	1,300	2014		Phase II			
OxyChem	Propane Distribution	70	2015					
LyondellBassel	Ethylene Plant	400	2015					
voestalpine	Steel Mill	700	2016					
OxyChem	Ethylene Plant	1,400	2016					
M&G Group	PET Plant	751	2016					
CCI	Condensate Splitter	400	2016					
Cheniere	LNG Plant	12,000	2017					
Construction Jobs				580	1,910	1,378	1,213	
Permanent Jobs						300	800	1,480

Sources: Corpus Christi Regional Economic Development Corporation, and author's calculations.

In addition to those industrial facilities that will take advantage of the abundant energy supplies in South Texas, the Eagle Ford oil and gas production boom has prompted a record number of development projects for petrochemical facilities in Corpus Christi's Port District around Corpus Christi Bay and Nueces Bay. For instance, Houston-based Cheniere Energy has announced the construction of a liquefied natural gas (LNG) export terminal at $12 billion, and Castleton Commodities International (CCI) is slated to invest $400 million for the construction of a condensate splitter complex. Meanwhile, nearly all existing petrochemical plants in Corpus Christi are undergoing expansion.

Workforce Shortage

According to a recent study (Lee 2014), the large number of capital projects within the Corpus Christi Port District will require a total of about 1,300 construction and craft workers per year on average through the end of 2017. Between 2013 and 2017, there will an additional workforce need for nearly 600 construction laborers per year, followed by 264 additional first-line supervisors and 248 operating engineers.

Forecasts for Construction Occupations

Occupation	2013	2017	Change	2013 Hourly Wage	Education Level
Construction Laborers	3,175	3,772	597	$11.66	Short-term on-the-job training
First-Line Supervisors	1,425	1,689	264	$24.43	Work experience in a related occupation
Operating Engineers & Other Equipment Operators	952	1,200	248	$15.68	Moderate-term on-the-job training
Carpenters	979	1,153	174	$15.32	Long-term on-the-job training
Plumbers, Pipefitters, & Steamfitters	1,055	1,221	166	$18.39	Long-term on-the-job training
Electricians	1,228	1,389	161	$19.84	Long-term on-the-job training
Construction Managers	663	795	132	$30.81	Bachelor's degree
Welders, Cutters, Solderers, & Brazers	400	498	98	$18.80	Postsecondary non-degree award
Heating, AC, Refrigeration Mechanics & Installers	389	483	94	$17.86	Postsecondary non-degree award
Office Clerks, General	579	670	91	$11.48	Short-term on-the-job training
Heavy & Tractor-Trailer Truck Drivers	414	498	84	$15.74	Short-term on-the-job training

Sources: Texas Workforce Commission, Lee (2014), and author's calculations.

In the absence of those large-scaled capital projects, a projected increase of 2,084 construction and craft skills jobs will be needed to accommodate the "natural" growth of the regional labor market through 2017. At its peak, the new industrial construction activity will require another 2,000 more positions in the local construction industry.

One distinction of those additional construction jobs is that they are not permanent positions. Also, the timelines of those projects are not perfectly aligned, such that not all construction workers will be needed at the same time. The staggering nature of those projects will allow some workers to move from one completed site to another site.

The local construction industry is facing an unemployment rate about 10 percent, more than double the overall regional unemployment rate. The majority of the unemployed are construction laborers and helpers that do not have specific skills. On the contrary, those craft skills that are in high demand, such as engineers and equipment operators, carpenters, plumbers, welders and electricians, do require formal training. Before 2018, the surge in demand for craft skills will likely exceed the existing workforce training capacity of the region. As a result, wages for construction and craft workers will likely rise more rapidly than the current growth pace at about 6 percent annually. Yet potential labor shortages might also be mitigated by hiring workers from other regions outside the Coastal Bend.

Regional Employment Outlook

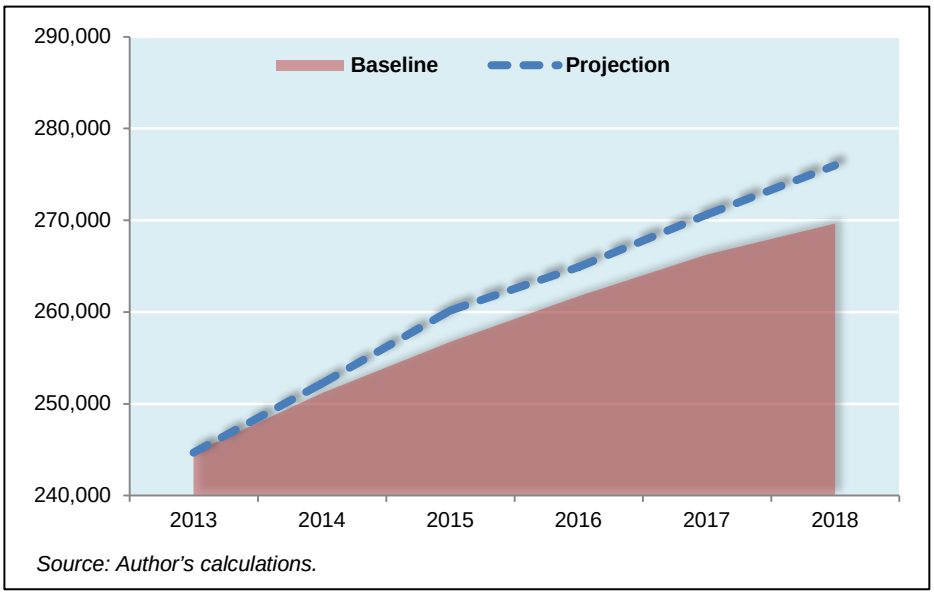
Once constructed, each of those new industrial facilities will be staffed with permanent employees. By 2018, when most of those facilities will have become operational, there will be an estimated increase of 1,480 full-time-equivalent *permanent* job positions.

The above estimates for local jobs associated with the current industrial developments in Corpus Christi represent only *direct* employment effects. Those projects also create additional, or ripple, effects on the rest of the Coastal Bend economy. First, construction activity generates spillover effects on other local industries, from banking and business services to restaurants and education. Likewise, those industrial sites' operations will also generate ongoing spillover effects on the rest of the region through both their benefits to their local suppliers and their employees. Those economic impacts are commonly referred to as *secondary* effects that ripple through various corners of the community.

Including those secondary effects, the construction and operation of those industrial facilities will generate a sizable impact on overall employment in the Coastal Bend. The first chart on the next page illustrates their *total* employment impact

on the region over time through 2018. The area labeled as "baseline" delineates regional employment forecasts drawing on projected future trends across local industries, without the consideration of those capital projects. Driven by the Eagle Ford development, the region is already expected to gain employment by about 2.5 percent over the next two years, more than twice its historical average. The dashed line labeled as "projection" reflects the forecasts that also take into account the total employment impacts, including both direct and secondary effects, of those major industrial developments.

Impact of Industrial Developments on Coastal Bend Employment

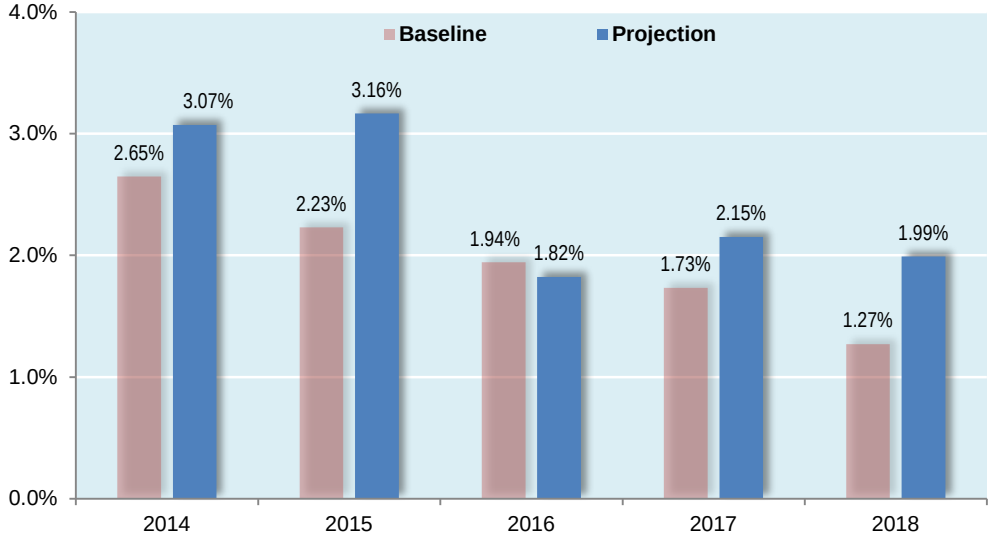


Source: Author's calculations.

Between 2014 and 2018, those industrial projects together are expected to add a cumulative total of 3,663 jobs to the Coastal Bend, in addition to the baseline estimates. The amount of additional jobs is equivalent to 1.4 percent of the projected regional employment, and it adds to the baseline annual employment growth by another one-half of one percent on average. The peak of economic impact will occur in 2015, when regional employment is expected to grow by 3.2 percent. By 2018, the impacts of those industrial facilities will shift from primarily construction-related employment that is only temporary in nature to permanent, manufacturing-oriented employment.

In addition to the overall employment level for the region, the current industrial developments will alter the composition of regional employment by changing the structure of the regional industry base. The construction of those industrial sites will spur short-term demand for workforce in construction, such as welders, pipefitters, electricians and laborers. Once constructed, those industrial facilities will begin to boost employment in the heavy manufacturing sector. Such developments will help reverse the historical trends of declines in employment in the industrial manufacturing sector.

Coastal Bend Employment Growth Forecasts



Source: Author's calculations.

Between 2013 and 2018, the manufacturing sector is expected to add nearly 2,700 jobs. Employment growth of 32 percent in this sector will be more than twice the projected average of 13 percent growth across all industries during that period. Most of the job growth in manufacturing will be found among manufacturers of petroleum, rubber and steel products.

The economic landscape of the Coastal Bend is about to shift. While the impacts of the Eagle Ford Shale will someday dissipate simply because of the very nature of oil and gas as exhaustible or nonrenewable natural resources, current developments in the shadow of the South Texas oil boom might leave a permanent mark in the region. Reversing the past declining trend, the industrial manufacturing sector is emerging as a major driver for the region's future economic growth.

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Any opinions expressed or implied are solely those of the original authors and do not reflect the views of the College of Business or Texas A&M University-Corpus Christi. Please send correspondence to Jim Lee, (361) 825-5831 or email jlee@tamucc.edu.

Note: This study is the second of a series that focuses on the regional economic outlook in the shadow of the Eagle Ford oil boom. The article is adapted from a report prepared for Workforce Solutions of the Costal Bend, titled "Industry Cluster Analysis for the Coastal Bend Workforce Development Area: 2014 Update."

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