Eagle Ford and Oil Prices: The Latest Developments

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University of Texas at San Antonio
Institute for Economic Development

- Eagle Ford Shale Community Development Program (21 Counties in South Texas)
- Small Business Development Centers - SBDC (79 Counties in South, West and Central Texas)
- Rural Business Program (79 Counties in South Texas)
- Procurement Technical Assistance Center (Texas)
- JP Morgan Chase Veteran's Program (Texas)
- Southwest Trade Adjustment Assistance Center (TX, OK, LA)
- SBDC National Information Clearinghouse (National)
- Minority Business Center (National)
- Community and Business Research (National, Int’l)
- International Trade Center (Mexico, Central/South America, Caribbean, North Africa)
Research at the Institute focuses on research projects that help business and policymakers plan for a dynamic future:

- Economic Impact Studies
- Community Development Studies (I-35, SH 130)
- EB-5 Immigrant Investor Regional Center Impact Studies
- Analysis on Various Topics:
  - Eagle Ford Shale
  - San Antonio Missions
  - South Texas Medical Center
  - University of Texas System
  - Targeted Industry Recruitment / Workforce Analysis
  - Repurposing of Military Bases for Commercial Use
UTSA
Institute for Economic Development

As the Research Arm of UTSA’s Institute for Economic Development we are dedicated to serving:

- Economic development corporations (e.g., SA EDF)
- City, state and federal governments
- Workforce development boards
- Businesses
- Associations
- Other community stakeholders
In theory, there is no difference between theory and practice; in practice, there is.

- Yogi Berra

UTSA has become the preeminent authority on economic development extension
History doesn’t repeat itself. But it does rhyme.

Mark Twain
UTSA – Emerging Tier 1 University

California: 9 Tier 1 Universities (Population 38 Million)
1. Stanford University (1900)
2. University of California, Berkeley (1900)
3. California Institute of Technology (1934)
8. University of California, Davis (1996)

New York: 6 Tier 1 Universities (Population 19 Million)
1. Columbia University (1900)
2. Cornell University (1900)
3. University of Rochester (1941)
4. New York University (1950)
6. Stony Brook University-The State University of New York (2001)

Texas: Only 3 Tier 1 Universities (Population 27 Million)
1. University of Texas at Austin (1929)
2. Rice University (1985)
3. Texas A&M University (2001)
Some of the key features of the 2017 San Antonio Bond Program include:

• The $850 Million Bond program will not require a City Property Tax Rate

• 70% of the Bond dollars will be dedicated to street and drainage infrastructure projects

• The program includes over 200 planned miles of new sidewalk construction

• The Parks Proposition will improve 25% of our City's parks

• Through coordination with state, local and private partnerships, the City will leverage $350 million in outside funding within 37 of the Bond Program projects

• Only 20% of the $850 Million Bond Program is for Downtown specific projects, over 80%, or $680 million of the Bond is for Council District Projects

• The 180 projects selected align with 11 Guiding Principles and the City's SA Tomorrow Growth Plan (Guiding Principles include investing in Major Corridors and Increasing Connectivity)

• There is a planned 2017 Bond Program project within one mile of where a San Antonio residents lives or works

• The City has the highest credit rating available ("AAA") which allows the borrowing of money at the lowest interest rates possible putting more property tax dollars into infrastructure projects
Counties Included in Study Area

Producing Counties:
- Atascosa
- Bee
- DeWitt
- Dimmit
- Frio
- Gonzales
- Karnes
- La Salle

Adjacent Counties:
- Lavaca
- Live Oak
- Maverick
- McMullen
- Webb
- Wilson
- Zavala

Counties not included in the analysis are
Leon, Milam, Brazos, Burleson, Lee, Fayette, Lavaca, Edwards, Houston, and Wood
Eagle Ford Economic Reports
Economic Impact Since 2010

Economic Impact (billions)

- 2010: $2.9
- 2011: $25.0
- 2012: $61.2
- 2013: $87.8

2010 to 2016

- 2014: $60.0
- 2015: $40.0
- 2016: $20.0
- 2017: $10.0
- 2018: $-
Employment Since 2010

Job Supported

- 12,601 in 2010
- 47,097 in 2011
- 116,508 in 2012
- 154,984 in 2013

Graph showing the increase in job supported from 2010 to 2013.
Texas Eagle Ford Shale Drilling Permits Issued 2008 through March 2017

Source: Texas Railroad Commission DrillingPermitQuery (Includes New Drill & ReEnter Permits)
Texas Eagle Ford Shale
Total Natural Gas Production
2008 through February 2017

04/24/2017

Source: Railroad Commission of Texas Production Data Query System (PDQ)
Texas Eagle Ford Shale
Oil Production
2008 through February 2017

04/24/2017
Source: Railroad Commission of Texas Production Data Query System (PDQ)
Texas Eagle Ford Shale
Condensate Production
2008 through February 2017

04/24/2017

Source: Railroad Commission of Texas Production Data Query System (PDQ)
Texas Permian Basin  
(District 7C, 08, & 8A)  
Drilling Permits Issued  
2006 Through March 2017  

Source: Railroad Commission of Texas Drilling Permit Online Query System (Includes New Drill & ReEnter Permit)
Drill, Baby, Drill

Rotary oil rigs in Permian Basin

Source: Baker Hughes

THE WALL STREET JOURNAL
How Much Oil and Condensate Has Eagle Ford Produced To-Date?

2,130,511,010 Barrels

(over 2 billion barrels)
Going for the Record

U.S. production of crude oil and condensate, thousand barrels a day

Source: Energy Information Administration

By Spencer Jakob
Texas Oil Production Surpassed 1988 Levels in September 2012
American crude oil production

Million barrels per year

- Hubbert peak
- Actual

Source: IEA

Focus: Peak oil | The Economist
1956

M. King Hubbert, a geologist for Shell Oil, says that

U.S. oil production will likely peak between 1965 and 1970 and decline steadily thereafter.

Output will indeed peak in 1970 and then trend downward—but it will jump by two-thirds from 2009 to mid-2014.
Worldwide production of oil, 1950 to 2014

Graph by outrunchange.com.
Data from 1980 onward from U.S. Energy Information Administration:
If OPEC does continue the oil production cuts, the biggest beneficiaries will be in Texas and not the Persian Gulf.
How Many Companies Does It Take to Produce 75% Oil Output?

- **U.S. – 77** (similar numbers for the UK and Canada)
- Russia – 4
- China – 3
- Brazil – 1

In Saudi Arabia, Iran, Mexico and Kuwait one state producer accounts for nearly 100% of total output.

U.S. is now the world’s swing producer.

OPEC’s New Revelation: There is No Minister of Shale!
Crude Oil U.S. Imports from OPEC Countries (000 Barrels)
Shale oil and gas have the potential to dramatically alter world energy markets

map of basins with assessed shale oil and gas formations, as of May 2013
Economic Impact and Legal Analysis of the Shale Oil and Gas Activities in México

Preliminary Report
MEXICO’S ECONOMY AND HYDROCARBONS

Hydrocarbons represented 34% of the Federal budget.
More investment
Declining production
Growing demand

INVESTMENT IN E&P
THOUSAND MILLIONS PESOS

OIL PRODUCTION
THOUSANDS OF BARRELS PER DAY

Source: Secretaría de Energía

CCN-LAW.COM
U.S. Natural Gas Pipeline Exports to Mexico

2013 – 660 billion cf
2014 – 730 billion cf
2015 – >1 trillion cf

Source: U.S. Energy Information Administration
Major proposed natural gas pipeline projects for exports to Mexico

Sierrita lateral
capacity: 210 MMcf/d
expected ISD: 9/2014

Norte crossing project
capacity: 366 MMcf/d
expected ISD: 7/2013

Willcox lateral 2013 expansion project
capacity: 185 MMcf/d
expected ISD: 4/2013

Samalayuca lateral
capacity: 238 MMcf/d
expected ISD: 7/2013

Eagle Ford Shale pipeline system expansion
capacity: 2,100 MMcf/d
expected ISD: 12/2014

South Texas expansion project
capacity: 300 MMcf/d
expected ISD: 6/2014

Legend

★ natural gas export projects less than 50 miles
- natural gas export projects greater than 50 miles
● natural gas export points of exit
existing natural gas pipelines
ISD = in-service date
Deep and ultra-deep oil fields in the Gulf of Mexico (2012)

- Oil well in Mexico
- Oil well in the United States
Total Economic Output Impact in 2013 21-County Study Region

- Over **$87 billion** in economic output (up from $61B in 2012 and $25B in 2011)

- Over **154,000** full-time jobs supported (up from 116,000 in 2012 and 47,097 in 2011)

- Over **$5.6 billion** in salaries and benefits paid to workers (up from $4.7B in 2012 and $3.1B in 2011)

- Over **$42 billion** in gross regional product (up from $28B in 2012 and $12.63B in 2011)

- Over **$2.2 billion** in state revenues (up from $1.2B in 2012 and $358 million in 2011)

- Over **$2.2 billion** in local government revenues (up from $1B in 2012 and $257 million in 2011)
Moderate Scenario Estimated Combined Impacts for 2023 (21-County Area)

- More than **$137 billion** in total economic output (at $65/bbl: **$48-68 billion**)
- **196,660** full-time jobs supported (at $65/bbl: **72,000-101,000** full-time jobs supported)
- **$12 billion** in salaries and benefits paid
- **$72 billion** in gross regional product
- **$4 billion** in state revenues
- **$4 billion** in local government revenues
Wireframe glimpse of the Shah Deniz 2 platforms in Azerbaijan
- Standards in the oil and gas industry just for valves.
- Shale E&P companies use standardized, interchangeable parts.

Source: IHS
Building an Oil Factory

Instead of drilling wells on an ad hoc basis, Liberty Resources is developing a 96-well North Dakota development called Stomping Horse in a methodical manner to reduce costs. The company has built a “utility corridor” that connects and services the well pads, reducing the need for heavy truck traffic and long runs of pipeline to isolated units.

- A network of 16-inch pipe will collect the natural gas for sale; a 6.5-inch oil pipeline will gather the oil.
- Natural gas will also be captured and piped around the project to power drilling rigs and other equipment.
- Water for hydraulic-fracturing operations in the 96 wells will come from a single “frac pond” connected by pipeline to the well pads.
- A saltwater disposal well will take wastewater via pipeline from oil-extraction operations.

Source: Liberty Resources LLC
New and Expanded Rail Projects in the Eagle Ford

Rail can move ONE ton 500 miles on ONE gallon of fuel
Gardendale Railroad 2009- La Salle County  Status : Abandoned
Why Do We Have a Global Oil Market?

Even largest ships visit docks...
Knock Nevis
Most known vessel in the world
The Shape of Things to Come

LNG tanker (side view)

- Bridge
- LNG Tanks
- Ballast Tank
- Engine Room
- Pump Room
- Double Hull
There’s no chance that the iPhone is going to get any significant market share. No chance.

1885 The state geologist of Pennsylvania warns that the “amazing exhibition of oil” is only a “temporary and vanishing phenomenon.” And John Archbold, John D. Rockefeller’s partner in Standard Oil, sells some company shares at a discount, fearing that oil will run out.

“I will drink every gallon [of oil] produced west of the Mississippi.”

John Archbold

Source: “The Quest” by Daniel Yergin, 2011
2005  

Energy tycoon T. Boone Pickens tells a conference of alternative-fuel advocates:

“Global oil [production] is 84 million barrels [per day]. I don’t believe you can get it any more than 84 million barrels. I don’t care what Abdullah, Putin or anybody else says about oil reserves or production. I think they are on decline in the biggest oil fields in the world today.”

> In 2013, global oil production will top 90 million barrels a day.
Oil Price Prediction Hall of Fame

Why Oil Prices Won’t Fall Below $100 a Barrel
Chad Shoop, The Sovereign Investor Daily - September 1, 2014

Oil won’t drop below $100 in 2014, Iran says
Mohsen Qamsari, director for international affairs at the National Iranian Oil Company – May 24, 2014

Oil prices won’t fall below $100
Petroleum Policy Intelligence – July 23, 2012

OPEC Won't Let Crude Oil Fall Below $100
Rafael Correa, President of Ecuador – September 27, 2008

Oil prices won't drop below $100
Yusuf bin Ahmed Kanoo group managing director Khalid Mohammed Kanoo – May 27, 2008

Pickens says oil won't go below $100
August 14, 2008
Slippery

Surging U.S. oil production put an end to a three-year run of stable crude prices in 2014. It has barely slowed down in the year since, fooling many investors and thwarting several short-lived rallies. Global producers have added to the flood, and prices have fallen further on word OPEC won’t budge on production.

Nov. 27, 2014
in a surprise move, OPEC maintains oil-output target.

May 29, 2015
Oil prices bounce amid drilling cutbacks and robust demand.

Dec. 4
OPEC meeting concludes without any agreement to cut output.

Dec. 31
$37.04

Source: Oil Price Information Service
Looking Ahead at Oil Prices

Where investment banks surveyed in June see the price per barrel of U.S. crude-oil futures in the next few quarters

$110

Nymex crude oil, price per barrel

Through July 5

Source: WSJ Market Data Group (Nymex crude prices); the companies

THE WALL STREET JOURNAL.
“The oil price drop came as a surprise. It captured my country in a state in which we were not sufficiently diversified.”

Angolan Finance Minister Armando Manuel
IMF Annual Meetings
October 6-11, 2015
Lima Peru
PLUMMETING PRODUCTION

BOOMTOWNS BUSTING
When oil and gas companies slash jobs and production, it has a trickle-down effect on the local economy. Hotels, restaurants and other small businesses that depend on oil and gas workers start seeing a dip in revenue, which has an impact on the state budget as a whole. Unemployment rates are creeping up, too.

TAKING STOCK
The oil and gas industry fuels the state budget primarily through sales and production taxes. The budget currently has a $4 billion surplus, but if oil prices remain low, Texas might need to dip into its Rainy Day Fund.

TEXAS OIL AND GAS TAX REVENUE
## Change in hotel revenues in top oil-producing counties

These 10 counties were Texas’ top oil producers when prices peaked in mid-2014. Once rumbling with activity, their hotels have seen the steepest drop in revenues amid the drilling slowdown.

<table>
<thead>
<tr>
<th>County</th>
<th>2015 revenues</th>
<th>2014 revenues</th>
<th>Percent change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karnes</td>
<td>$16.9 million</td>
<td>$23.4 million</td>
<td>-27.6%</td>
</tr>
<tr>
<td>La Salle</td>
<td>$15.4 million</td>
<td>$26 million</td>
<td>-40.6%</td>
</tr>
<tr>
<td>DeWitt</td>
<td>$9 million</td>
<td>$14.9 million</td>
<td>-39.2%</td>
</tr>
<tr>
<td>Gonzales</td>
<td>$7 million</td>
<td>$11.9 million</td>
<td>-40.9%</td>
</tr>
<tr>
<td>McMullen</td>
<td>$2.1 million</td>
<td>$2.6 million</td>
<td>-20.4%</td>
</tr>
<tr>
<td>Andrews</td>
<td>$5.6 million</td>
<td>$8.6 million</td>
<td>-34.7%</td>
</tr>
<tr>
<td>Ector</td>
<td>$80.6 million</td>
<td>$108.7 million</td>
<td>-25.8%</td>
</tr>
<tr>
<td>Upton</td>
<td>$749,000</td>
<td>$1.1 million</td>
<td>-29.2%</td>
</tr>
<tr>
<td>Martin</td>
<td>$2.6 million</td>
<td>$3.6 million</td>
<td>-26.3%</td>
</tr>
<tr>
<td>Dimmit</td>
<td>$9.5 million</td>
<td>$13 million</td>
<td>-27.0%</td>
</tr>
</tbody>
</table>

Data from Source Strategies Inc.
Medium-Long Term Strategies for Success

• Look for **Opportunities to Diversify** the Local Economy (**Destination Locations**)  

• **Rediscover Your Community’s History** and Architecture as a Tool for Economic Development (**Why was the City Founded in the First Place?**)  

• Seize the Opportunity to Implement **Form-Based Zoning That Emphasizes Mixed-Use, Flexibility, Livability and Sustainability**  

• **Forge Linkages, Alliances** and Engage Other EFS Communities, Higher Education Institutions  

• Identify **Best Practices** from Other Shale Plays  

• **Work with Elected Representatives** at the Municipal, County, State and National Levels on Infrastructure Planning
Looking Beyond Eagle Ford: Basics of Sustainable Infrastructure
(Key to Attracting New Residents, Visitors and Industry)

- Better Roadways
- Improved Medical Facilities
- Broadband Networks
- More Housing Options
- Adequate Water and Power Supply, Improved Waste Management
- Better Quality K-12 and Vocational Education
- Improved Aesthetics, Elimination of Blight, Land Recycling (Bulldozing Derelict Houses, Cleaning Up Junkyards; Renovation and/or Repurposing of Historical Buildings)
- Branding: Identity, Gateways
- Livability: Public Amenities that Improve the Desirability of the Community and Quality of Life (Lakes, Parks, Hike/Bike Trails, Walkable Neighborhoods)

Why would someone want to live in or visit your community?
Strong Towns contributor Andrew Price has argued this kind of overengineering is better called a "fat street."
Examples of Why Public Spaces Fail

- Designed to be looked-at, not touched (neat, clean and empty)
- Lack of good places to sit
- Lack of gathering points
- Poor entrances or visually inaccessible
- Domination of space by vehicles
Lack of places to sit; lack of GOOD places to sit
Lack of Gathering Points

Paris’ Parc de la Villette

Laguna Beach along Pacific Coast Highway
Poor Entrances and Visually Inaccessible Places

New York City’s Bryant Park (before and after)
Domination of Space by Vehicles

George Street in Sydney, Australia

Paris, France
Blank Walls or Dead Zones Around the Edges of a Place
Inconveniently Located Transit Stops
Paths That Go Where People Don’t Want to Go

Phoenix, Arizona

Luxembourg Gardens in Paris
The Future Ain’t What It Used To Be

- Yogi Berra
“We have the greatest history of *any* state in the union—there’s nothing to compare to it. That’s not Texas brag. *More books have been written about Texas than any state in the union. In fact, there are more books about Texas than all the rest of the states combined. And it’s not because we have so many history professors in Texas. It’s that we have such a diverse and colorful history.*”

James Perry Bryan, Jr.
from Texas Monthly August 2015
MOST POPULAR VEHICLE BY STATE

- California: Ford F-150
- Nevada: Dodge Grand Caravan
- New York: Chrysler 300
- Nevada: Dodge Ram 1500
- California: Nissan Altima
- Nevada: Mercedes-Benz C
- California: Honda Accord
- Nevada: Honda CR-V
IT'S SO HOT IN TEXAS

WE'VE INSTALLED FANS OUTSIDE
Current Installed Wind Power Capacity (MW)

Total: 69,471 MW
(As of 10/31/2015)

Data is from the American Wind Energy Association Third Quarter 2015 Market Report: http://www.awea.org

NREL
U.S. Department of Energy
Only Texas could turn defeat into a legend ... and a song, and a tourist attraction, and a major motion picture.
TEXAS IS THE
FINEST PORTION
OF THE GLOBE
THAT HAS EVER
BLESS MY VISION.

SAM HOUSTON 1833