Hydraulic Fracturing Market Outlook

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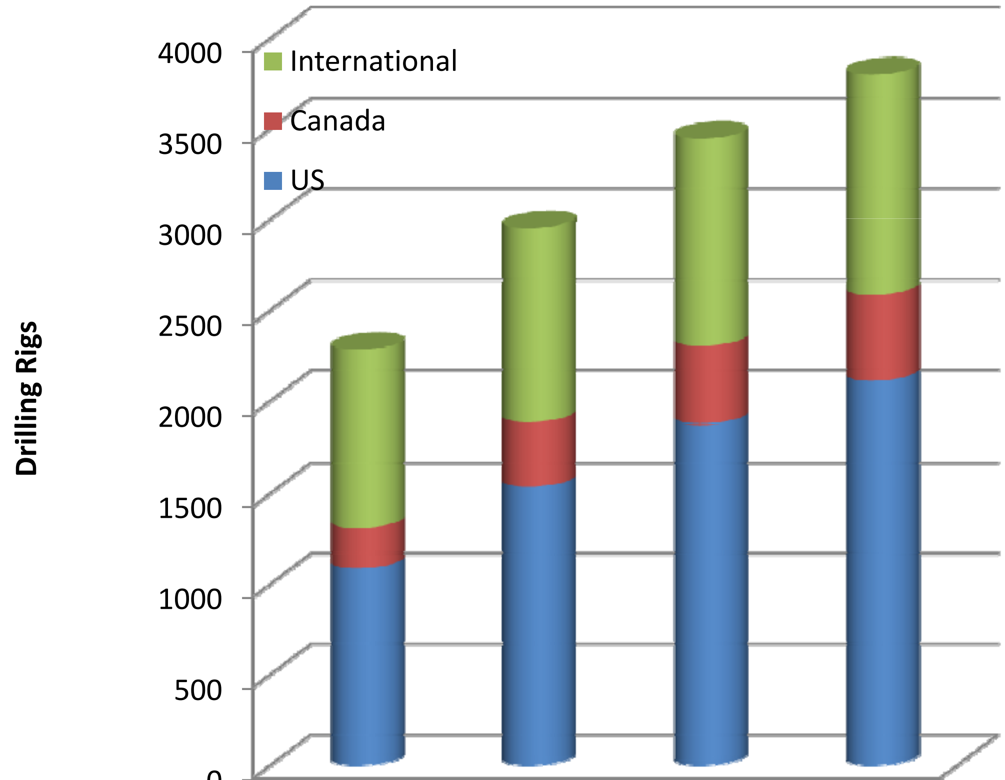
Global Drilling Activity

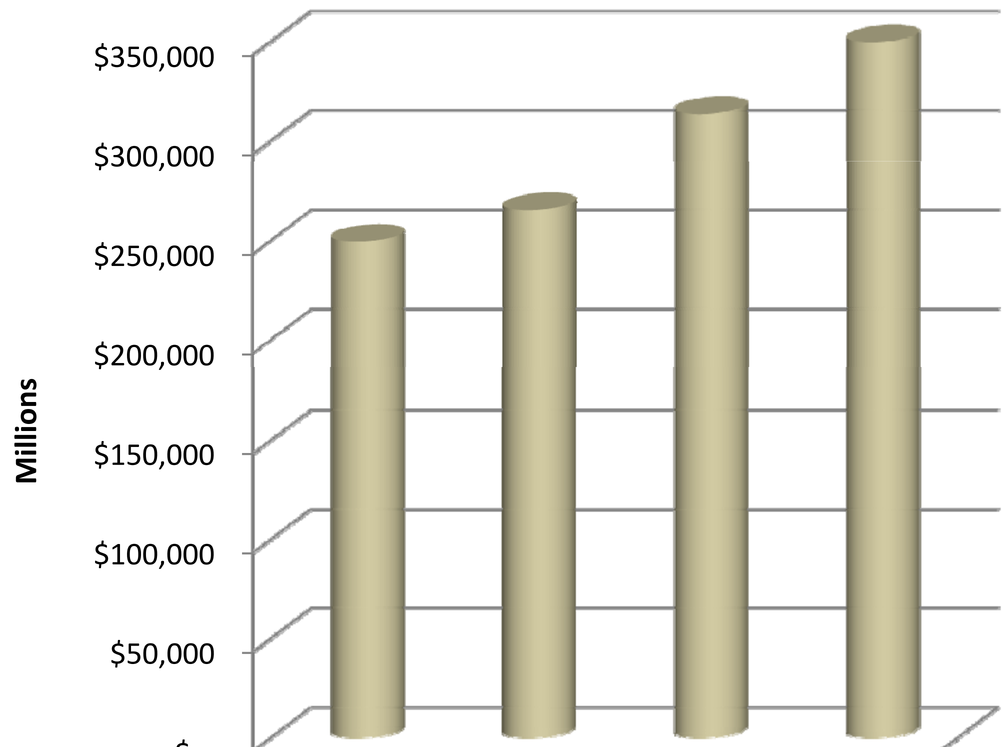
- **Chart** on this page plots annual drilling rig activity for three regions: US, Canada, International.
- **2011** established a new record for drilling activity globally. Global drilling will be up 10% in 2012.
- **US** drilling in 2011 matched the peak of 2008, with 13% growth for 2012 assuming ~$95 oil and $4 gas.
- **Canada** is still somewhat short of their peak years of 2005-2006. 2012 drilling should be up 10%.
- **International** drilling is at an all time high. 2012 drilling will be 6% higher.
- **Source** of this forecast is Spears' *Drilling and Production Outlook*, December 2011 issue.



	2009	2010	2011	2012
International	973	1068	1142	1214
Canada	223	348	428	472
US	1087	1536	1876	2113

Global Oilfield Market

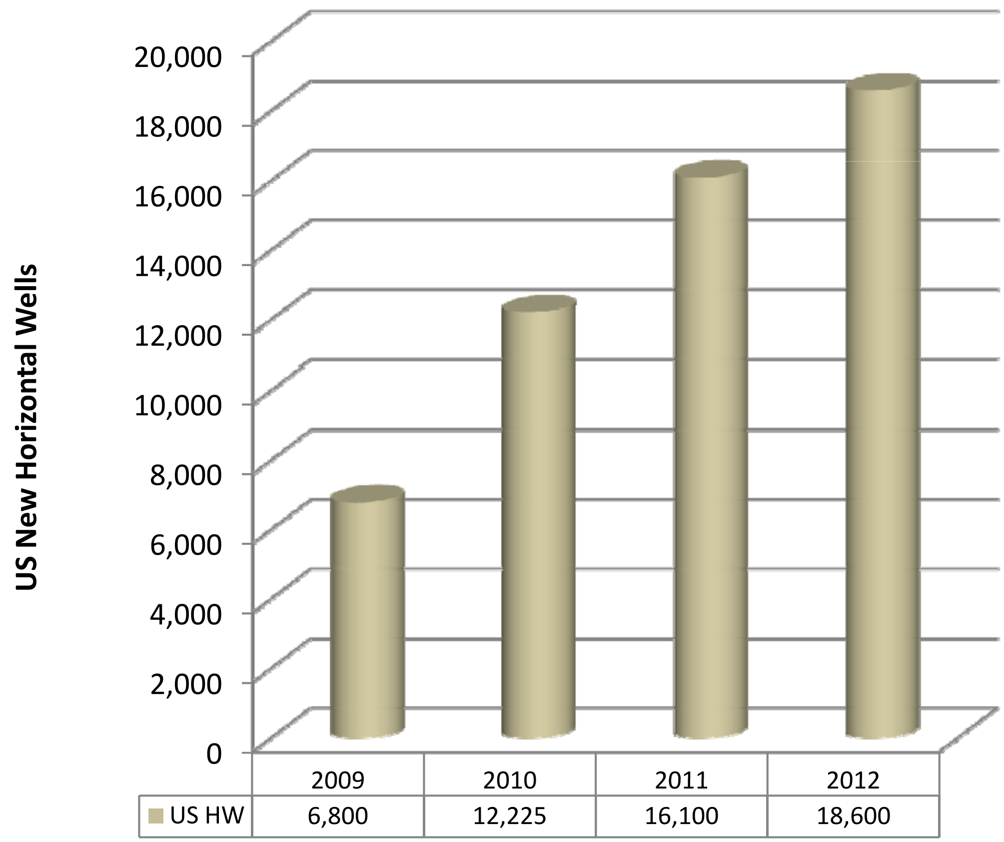
- **Chart**: The chart on this page plots Spears' estimates of global oilfield equipment and service market. 2009 saw the bottom of the last down turn, with $250 billion in global spending.
- **2011**: Last year's global oilfield market was $314 billion, up 18% from 2010. This set a new all-time record.
- **Outlook** for 2012 is positive. We are forecasting an 11% growth in the global industry driven by rising drilling activity everywhere on land and offshore.



	2009	2010	2011	2012
Global OFS	$249,623	$265,410	$313,714	$349,737

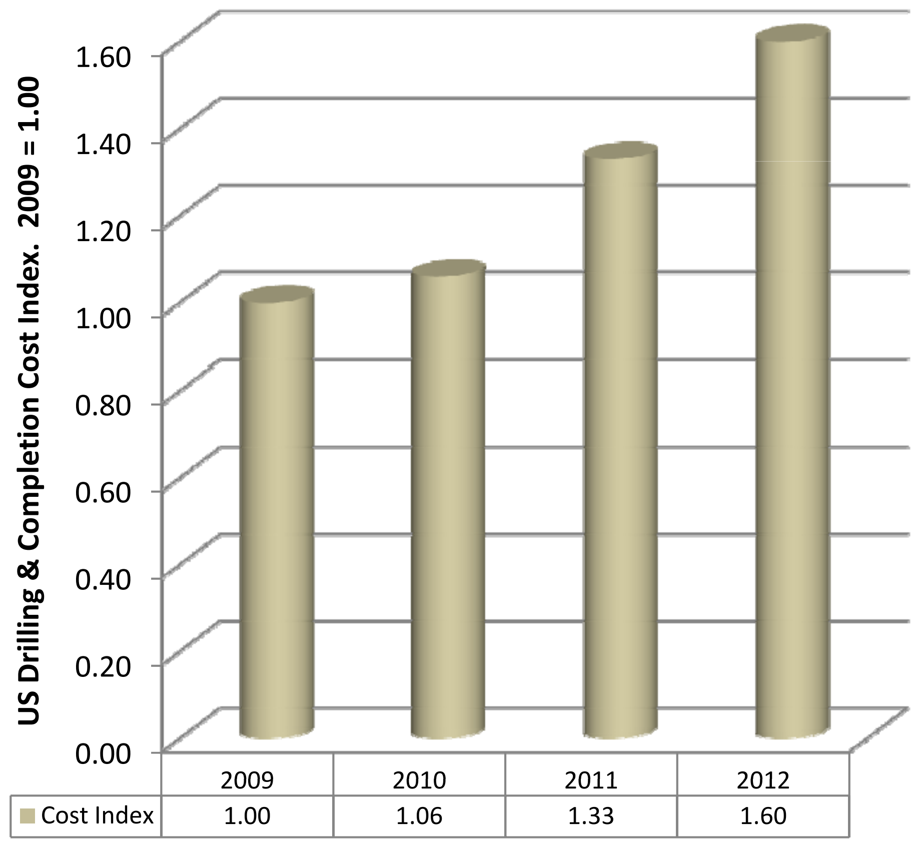
US Regional Horizontal Well Drilling

- **Chart**: The chart on this page plots Spears' estimates of the numbers of new horizontal wells drilled in the US. Around 16,000 wells were drilled in 2011 – a record again.
- **Outlook** for 2012 is positive. Spears' is forecasting almost 19,000 new horizontal wells to be drilled … +16%.
- **Horizontal drilling** in the US is the primary driver of hydraulic fracturing.



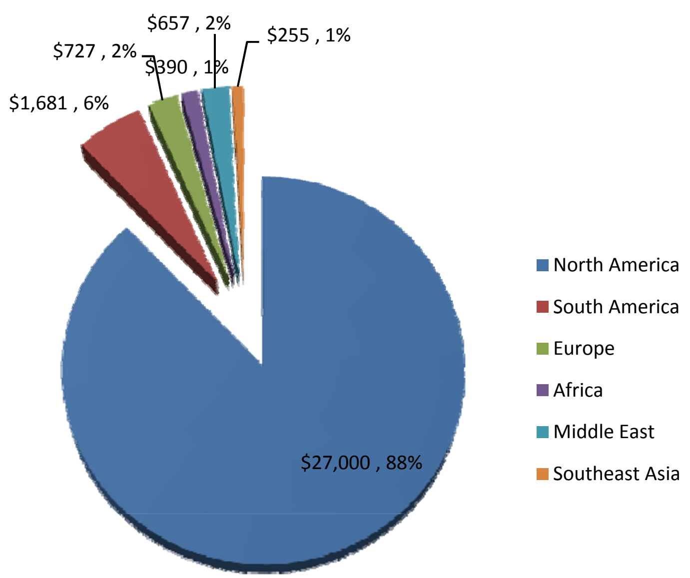
US Drilling Cost Inflation

- **Spears & Associates** tracks the cost to drill and complete wells by basin on land in the US. This "*DCS*" service is a subscription service for, primarily, large E&P companies and large hedge funds. Many oilfield service contracts are linked to this cost index.
- **Costs to drill and complete wells are rising** … as the neighboring chart indicates. Costs rose 6% in 2010, another 25% in 2011, and should rise another 20% in 2012.
- **Not all costs are rising rapidly.** For example, frac jobs and drill bits are up a lot, but wireline jobs and land drilling rigs show only modest increases.
- **Additionally, not all basins are showing rapid price inflation.** The Permian Basin has the sharpest increase in well costs, but other plays, such as the MidContinent, see more modest cost growth.

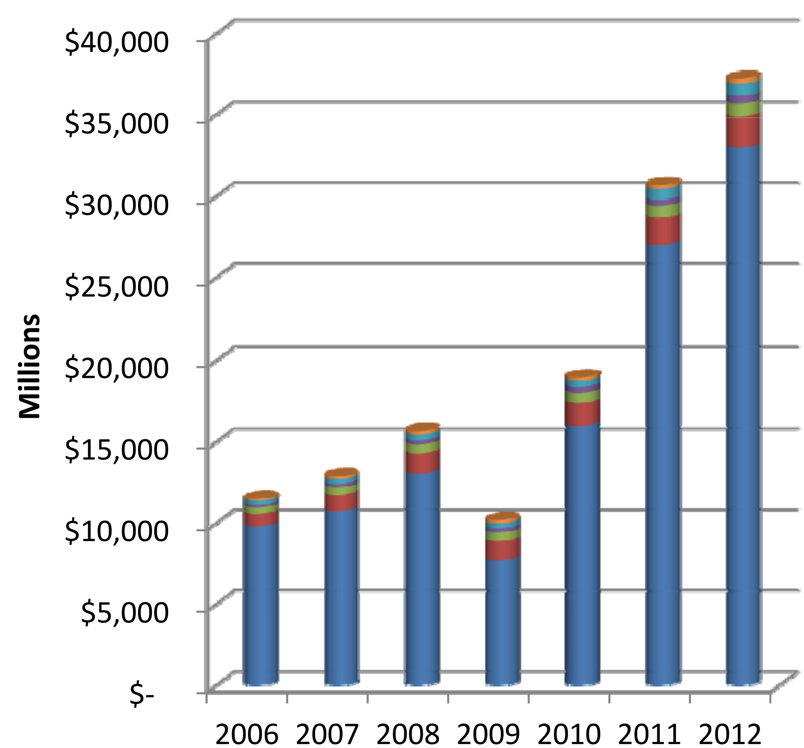


Hydraulic Fracturing Market

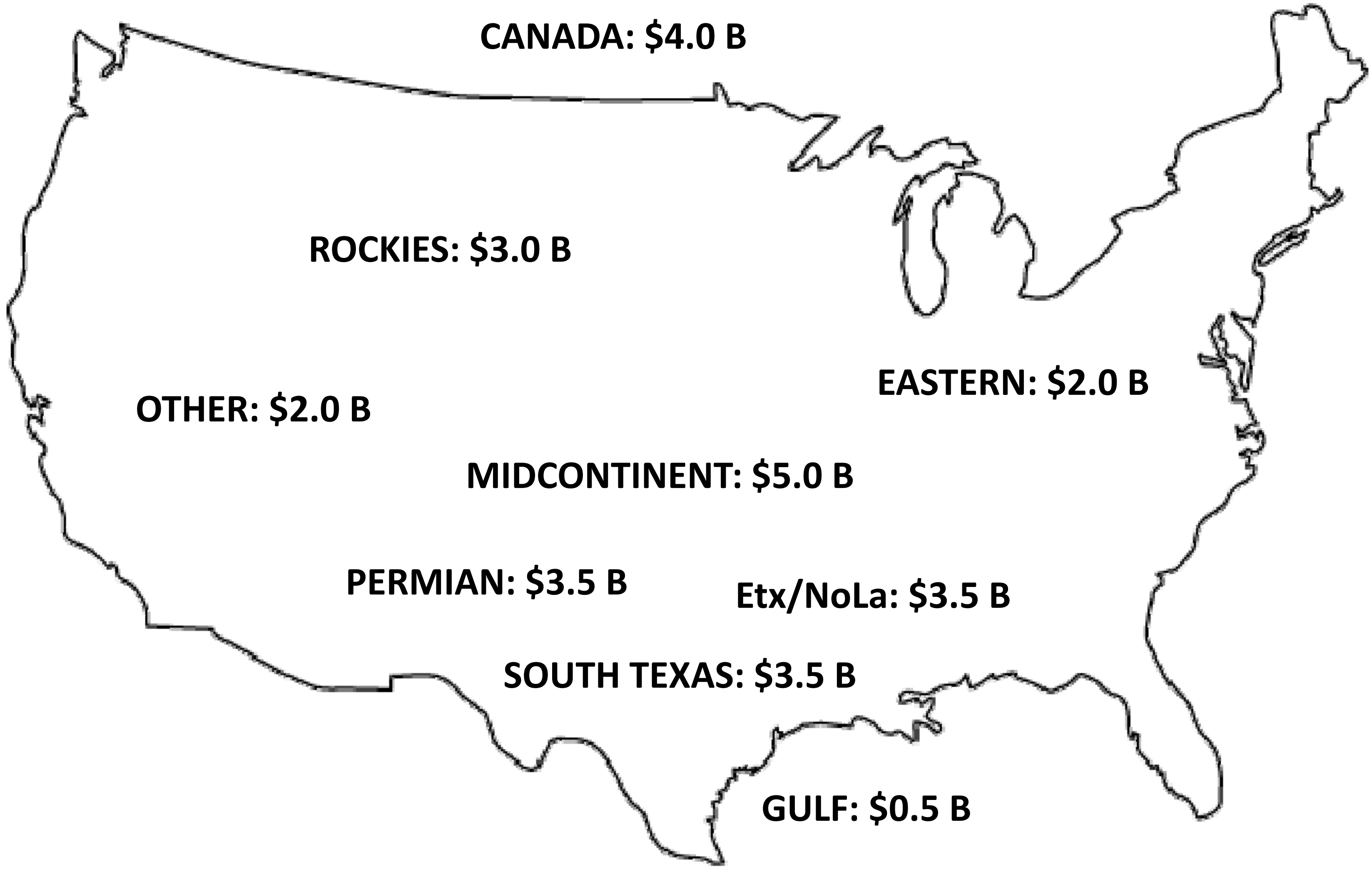
- **Global hydraulic fracturing** market was $31 billion in 2011, up from $19 billion in 2010 and $10 billion in 2009. Fracturing has grown at a rate much faster than drilling because frac intensity – the number of stages frac'd per new well – is rising. 2012 should reach $37 billion.
- **North America** is most of the frac market. Although frac work is performed throughout the world, the US and Canada dwarf all other countries.



2011 Regional Markets



NoAm $27 B Fracturing Markets

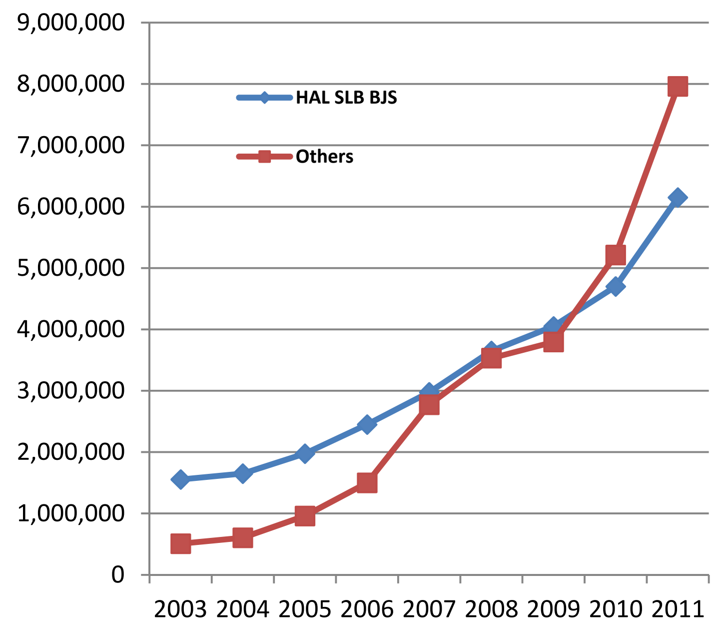


Frac Horsepower: 18M in '12

Estimated Frac Horsepower - North America

End of the year

Company	2003	2004	2005	2006	2007	2008	2009	2010	2011
Halliburton	600,000	650,000	800,000	1,000,000	1,200,000	1,500,000	1,650,000	1,900,000	2,600,000
Schlumberger	475,000	500,000	600,000	750,000	900,000	1,100,000	1,250,000	1,500,000	1,900,000
BJ Services	480,000	500,000	575,000	700,000	875,000	1,050,000	1,150,000	1,300,000	1,650,000
Frac Tech Services, LLC	20,000	31,500	110,000	215,000	541,000	741,000	750,000	996,250	1,500,000
Trican Well Service/Vanguard/Liberty	50,000	65,000	95,000	145,000	250,000	400,000	425,000	615,000	855,000
Weatherford	60,000	76,000	125,000	185,000	375,000	400,000	400,000	500,000	750,000
Calfrac/Pure/Century	35,000	50,000	76,000	125,000	230,000	270,000	315,000	400,000	600,000
Cudd Pumping	70,000	71,000	115,000	165,000	271,000	280,000	280,000	350,000	550,000
Superior Well Services	10,000	15,000	60,000	130,000	376,000	438,000	438,000	450,000	680,000
PTEN/Key/Universal	83,000	100,000	142,000	200,000	230,000	285,000	330,000	365,000	425,000
Complete/PumpCo	10,000	15,000	25,000	50,000	110,000	200,000	225,000	325,000	400,000
Sanjel Corporation	30,000	30,000	40,000	60,000	80,000	100,000	135,000	250,000	350,000
Basic Energy Services	23,000	30,000	36,000	49,000	78,000	90,000	110,000	140,000	200,000
C&J Energy Services						30,000	35,000	95,000	200,000
Canyon Technical Services				8,000	22,500	22,500	25,500	111,000	175,500
Great White	6,000	6,000	7,000	8,000	8,000	20,000	40,000	70,000	150,000
Pioneer Natural Resources									100,000
Maverick Stimulation Co. LLC	8,000	8,000	9,000	14,000	18,000	24,000	24,000	40,000	70,000
ProPetro	21,000	21,000	22,000	30,000	50,000	55,000	55,000	55,000	65,000
Performance Technologies (CHK)									60,000
Advanced Stimulation Technologies						12,000	24,000	36,000	50,000
Platinum Energy Services									50,000
Tucker Energy Services									50,000
Consolidated Oil Well Services, Inc.	12,000	12,000	12,000	14,000	18,000	18,000	18,000	18,000	50,000
Ultrafrac Tech Services									40,000
Compass									40,000
Torqued-Up									25,000
SPN/BHI (GOM frac pack vessels)	20,500	20,500	20,500	20,500	20,500	20,500	20,500	20,500	20,500
Acid & Cement Services	8,000	8,000	9,000	10,000	10,000	10,000	10,000	10,000	12,000
Producers Service Corp.	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	10,000
Tri Am Acid & Fracturing Co.	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	5,000
Swift Services	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
McOil Service Co., Inc.	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Other	25,000	30,000	40,000	55,000	70,000	100,000	120,000	350,000	475,000
TOTAL	**2,062,500**	**2,255,000**	**2,934,500**	**3,949,500**	**5,749,000**	**7,182,000**	**7,846,000**	**9,912,750**	**14,112,000**

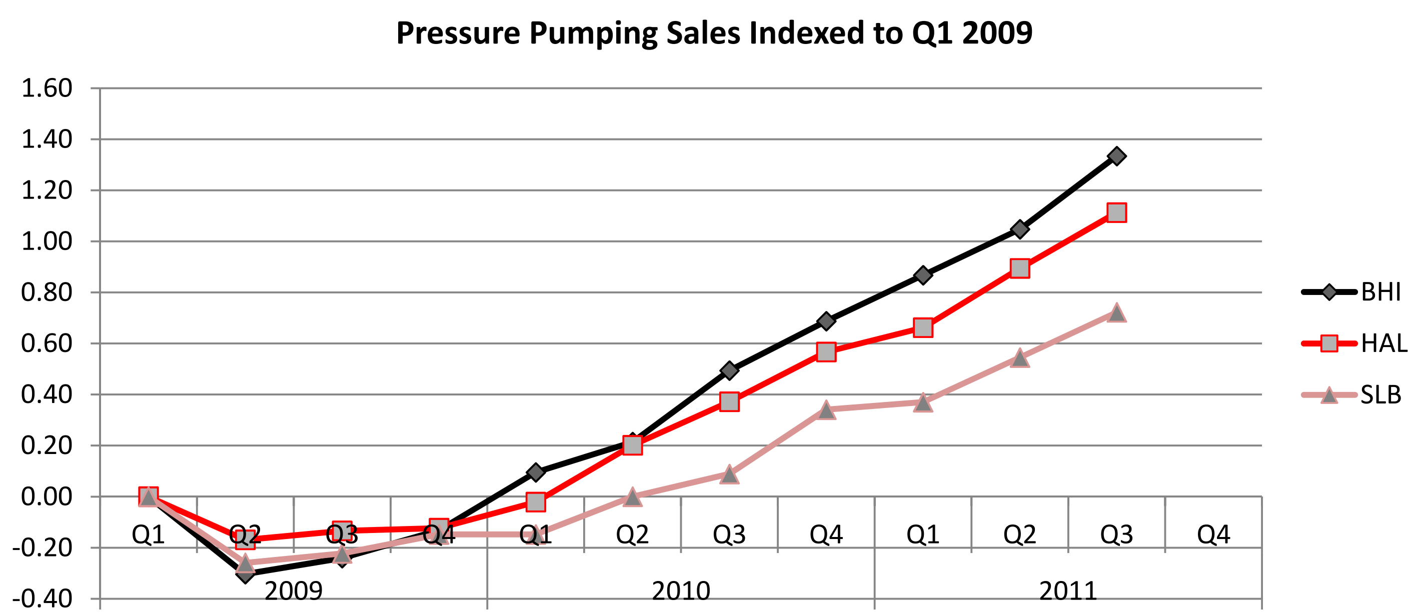


HAL v. SLB v. BHI Pressure Pumping

Comparing the three major service companies
We have indexed the pressure pumping sales of the three major service companies to 0.00 as of Q1 2009. This was the start of a downturn in the industry, followed by a very strong recovery that has gone on now for over two years.

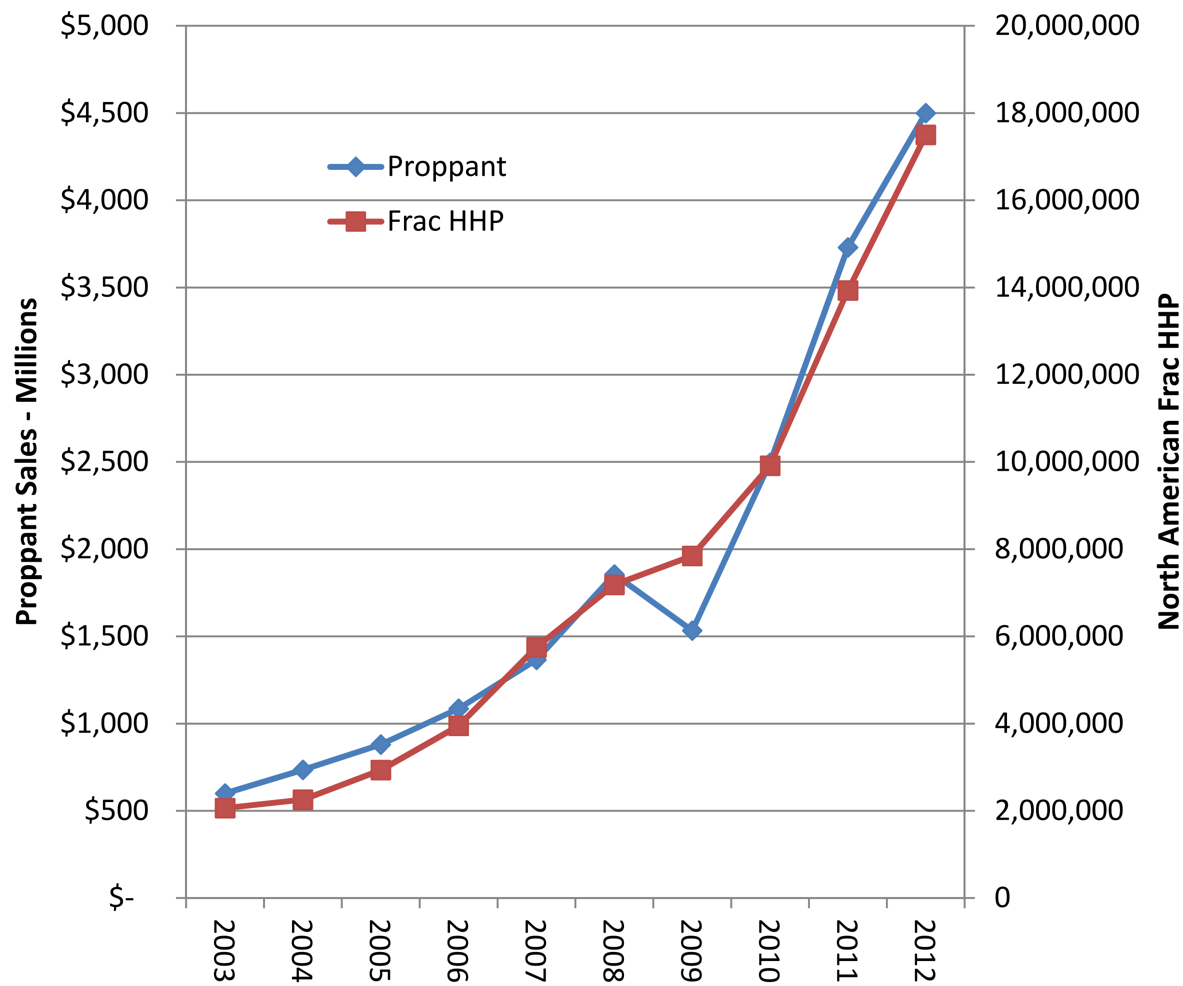
The chart below shows that the sales of all three companies is moving in concert, but that Halliburton and Baker Hughes are surging ahead at approximately the same pace while Schlumberger is lagging behind significantly.

This is certainly no surprise, but it does prove that HAL has decided to invest heavily in its North American business unit such that it can capture the full benefit of a strongly growing market in the same fashion as Baker Hughes' BJ Services division. Schlumberger, conversely, has kept its focus outside North America and does not participate in the same way with strong North American drilling activity.



Proppant Market

- The chart on this page compares estimated North American frac horsepower over time to estimated proppant sales.
- But for the market's downturn in 2009, the two have marched in lock step since 2003…and we assume they will continue to move in parallel in 2012.
- Obviously, the frac fleet does not decline when demand for frac services declines. In 2009 demand fell, but the fleet continued to grow because orders for new equipment placed in 2008 got delivered in 2009.
- Since 2003 the hydraulic fracturing market has enjoyed 100% utilization, which is the principal reason why these lines move in concert.

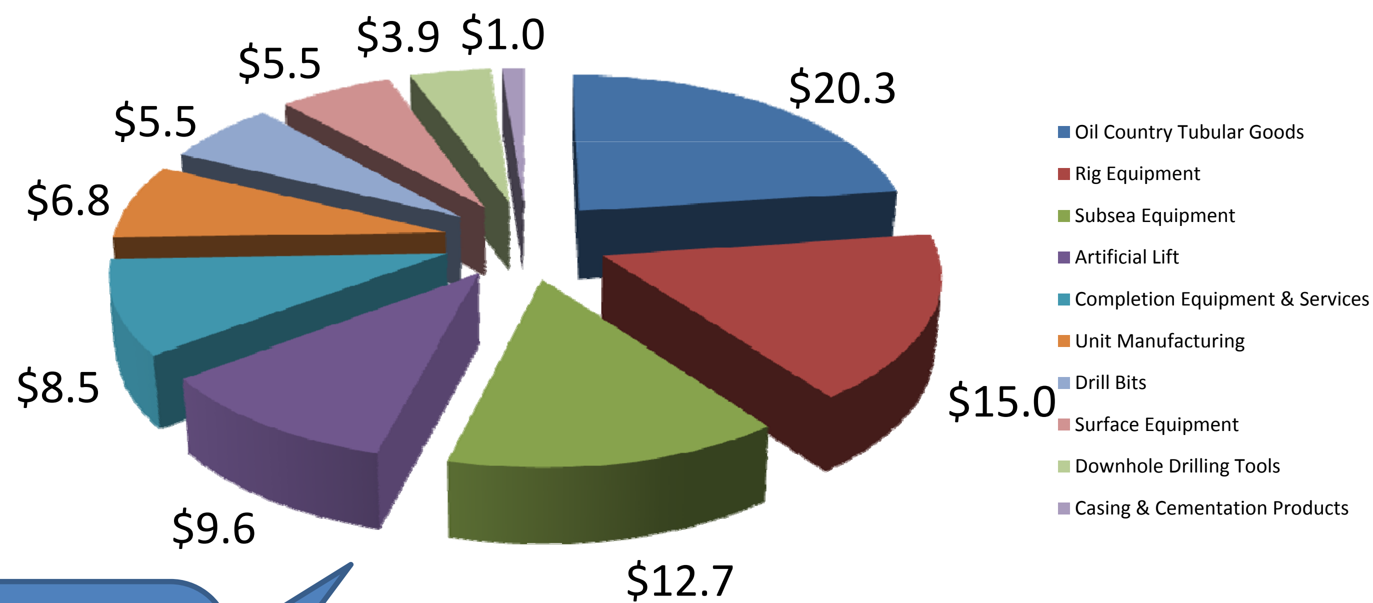


Proppant Market

Proppant Sales
Millions

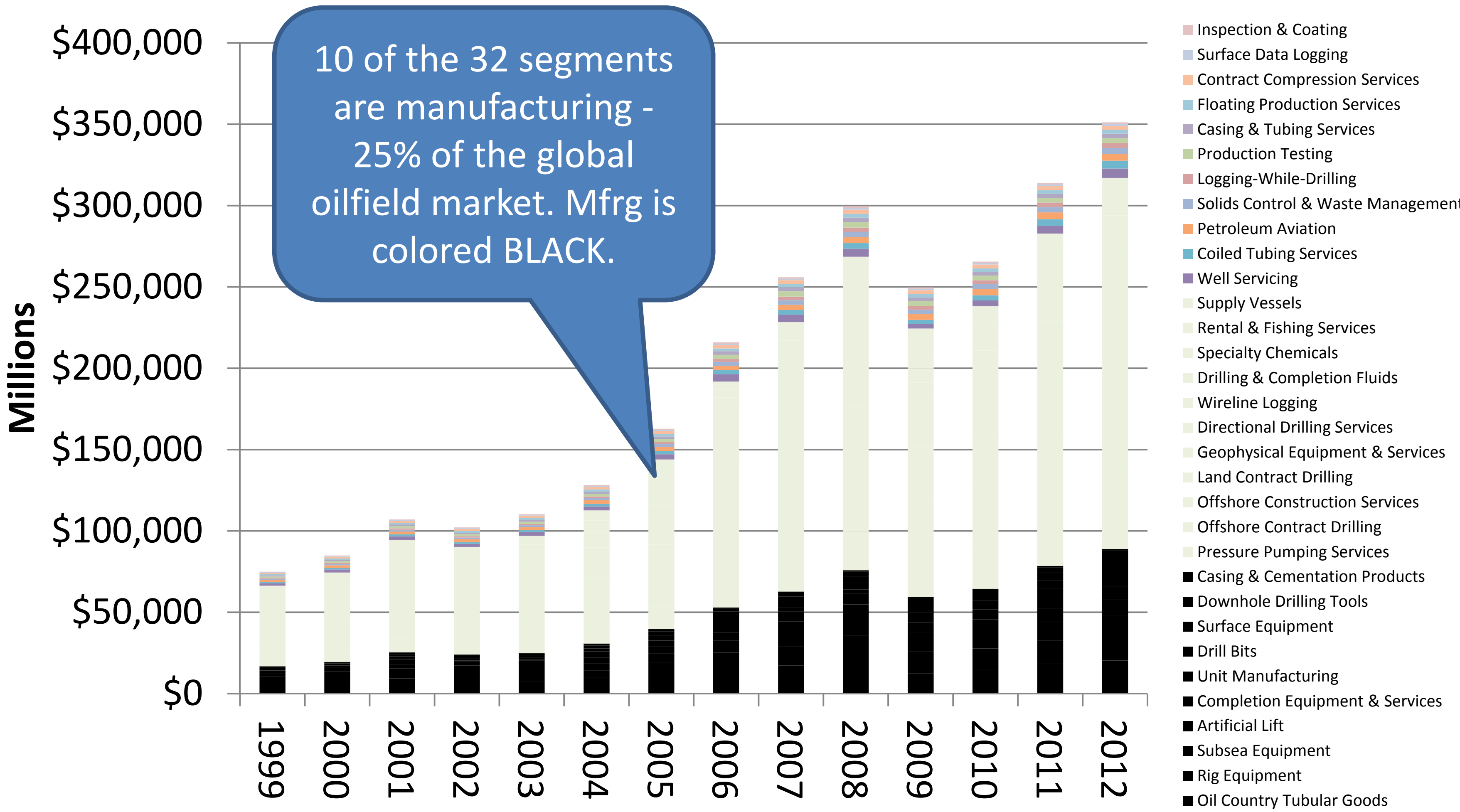
	2006	2007	2008	2009	2010	2011
Ceramic						
Carbo Ceramics	$277	$291	$370	$333	$441	$585
St. Gobain	$130	$150	$175	$145	$225	$300
Carimbaba	$40	$45	$50	$45	$55	$75
Other Sources	$20	$30	$40	$50	$60	$100
Subtotal	**$467**	**$516**	**$635**	**$573**	**$781**	**$1,060**
Resin Sand						
Momentive	$125	$150	$200	$175	$300	$550
Santrol	$100	$125	$200	$150	$358	$520
Atlas Resin Proppants	$14	$40	$45	$45	$80	$125
Other	$25	$35	$50	$50	$100	$300
Subtotal	**$239**	**$315**	**$445**	**$370**	**$738**	**$1,195**
Sand						
Unimin	$70	$100	$150	$125	$250	$500
Fairmount/Santrol	$100	$125	$200	$150	$193	$280
US Silica	$100	$140	$175	$125	$245	$280
Oglebay-Norton	$50	$60	$75	$55	$70	$100
Badger Mining	$40	$50	$65	$45	$70	$100
Other	$20	$60	$110	$90	$350	$600
Subtotal	**$380**	**$535**	**$775**	**$590**	**$1,178**	**$1,860**
Grand Total	**$1,086**	**$1,366**	**$1,855**	**$1,533**	**$2,696**	**$4,115**

Global Oilfield Manufacturing (Billions)

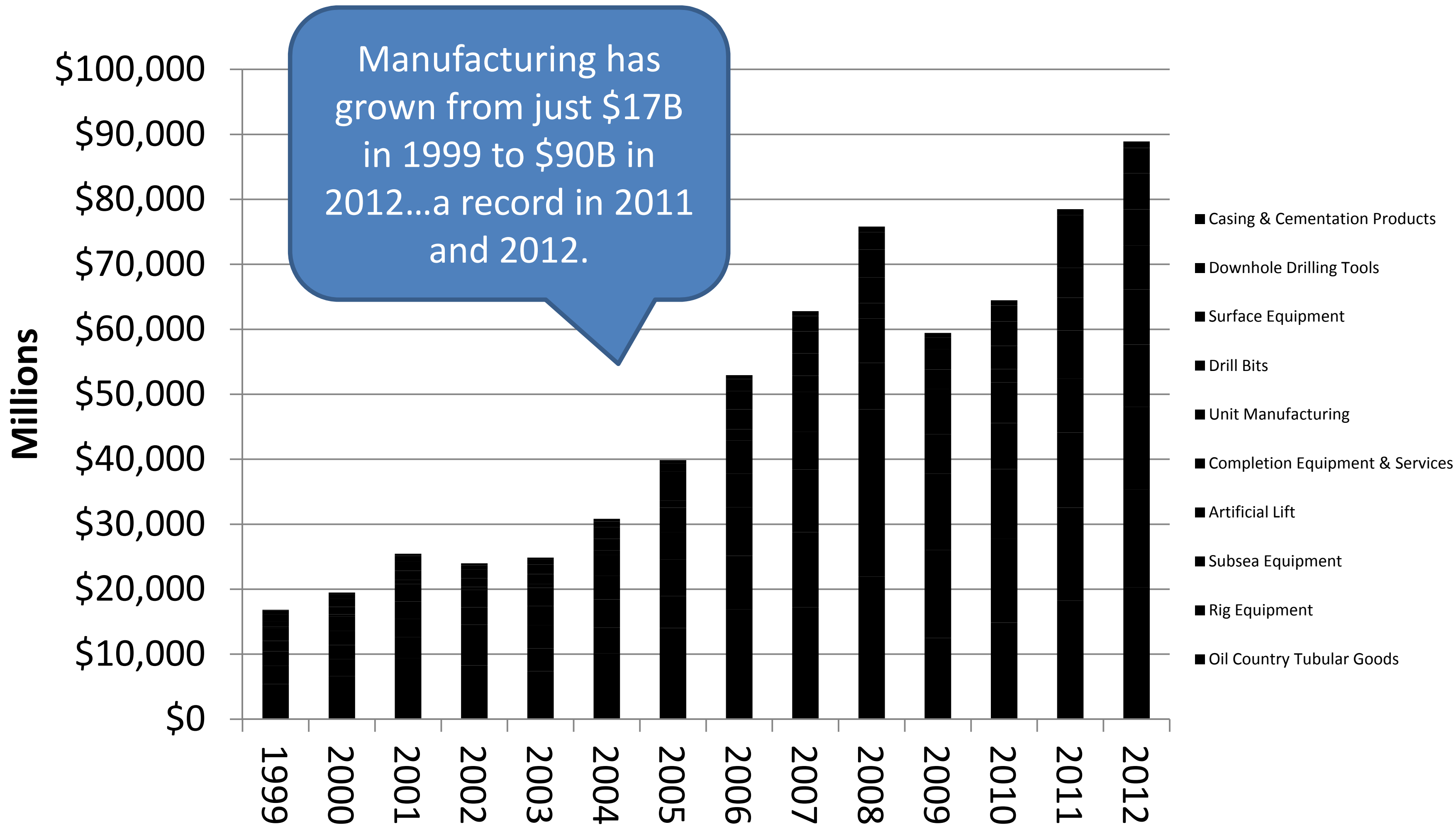


The $90B equipment market is mostly OCTG, rig equipment, subsea gear, artificial lift and completion tools.

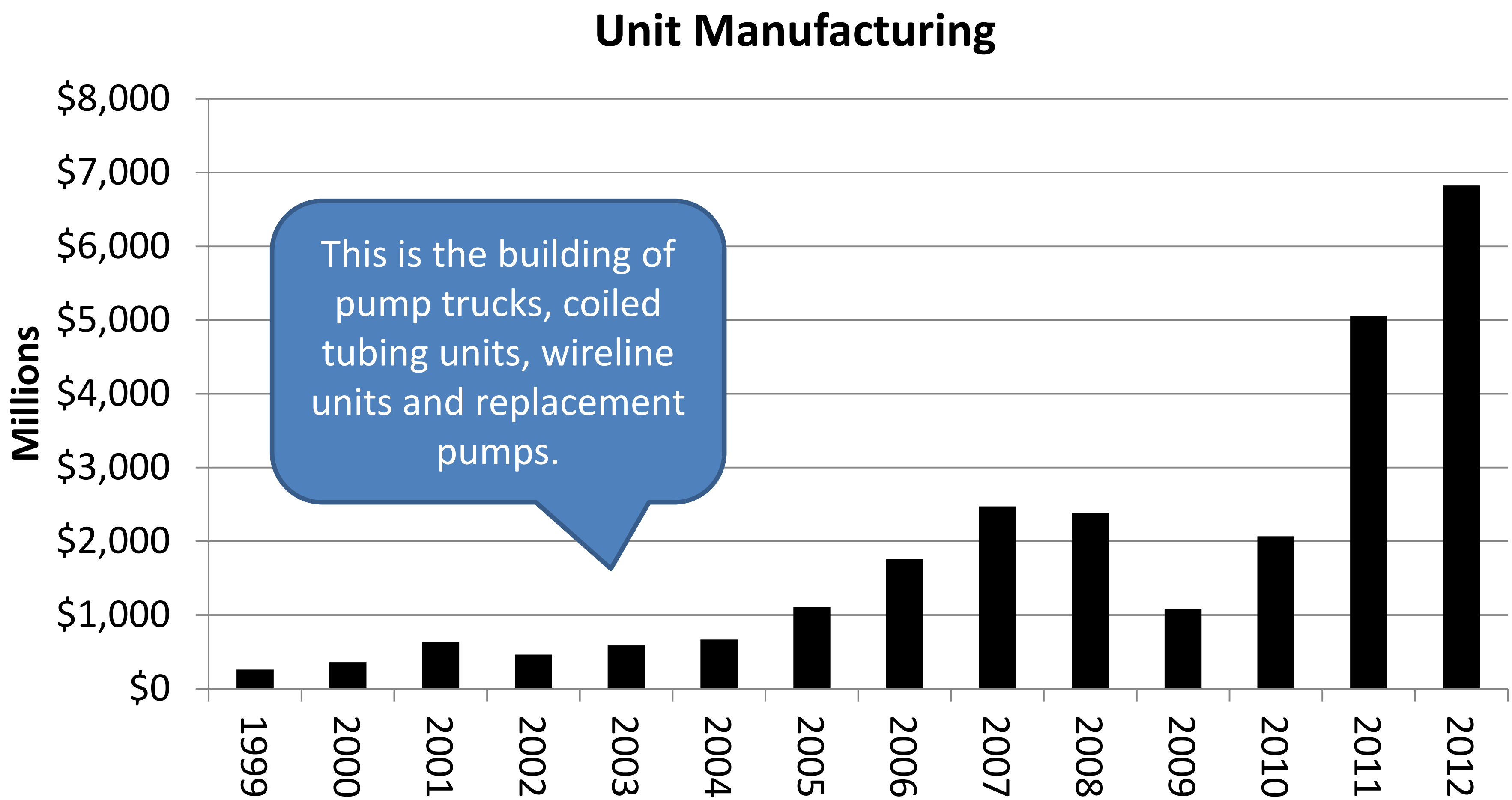
Global Oilfield Market



Global Oilfield Manufacturing Market



Global Pressure Pumping Mfrg.



Spears & Associates, Inc.

Spears & Associates is an oilfield equipment and service market consulting company. We were founded in 1965 and currently have ~400 clients around the world. About half are oilfield service companies and steel mills, a quarter are E&P companies, and a quarter are financial firms.

Spears has several subscription-based services:

Drilling and Production Outlook. Est. in 1982, this is a 50-country forecast of drilling activity. Most clients are service companies.
Oilfield Market Report. Est. in 1996, this tracks product line sales for ~250 oilfield service companies. Most clients are financial.
PipeLogix. Established in 1985, this tracks the price and demand for OCTG and line pipe. Clients are E&P and financial.
Oilfield Market Intelligence. Est. 2008. Includes all Spears' market research. Clients are financial and international E&P.
Drilling & Completion Cost Service. Est. 2008. Tracks by US basin costs to drill and complete wells. Clients are E&P and financial.

Spears also supports oilfield merger/acquisition transactions: Spears provides market-focused due diligence on 30-50 oilfield M&A transactions annually. Clients are generally private equity firms.

Lastly, Spears conducts bespoke market research: We have completed ~2,300 oilfield market research engagements around the world since our founding.

Spears & Associates has three partners, all based in Tulsa:

John Spears, president. Responsible for the Drilling & Production Outlook and the Drilling & Completion Cost Service.

Richard Spears, vice president. Responsible for the Oilfield Market Report and the Oilfield Market Intelligence series.

Kurt Minnich, publisher. Responsible for our PipeLogix OCTG and line pipe division.

Spears' partners do not invest in public oilfield securities. Partners will, however, occasionally invest in private oilfield service companies that may compete with the firm's clients. In that event, Spears & Associates will not provide consulting services during the period of the investment. Additionally, Richard Spears is on the board of directors of four oilfield service companies. The list of our investments and the list of boards we sit on is available upon request.