



PLIMSOLL MARK CAPITAL

We at Plimsoll Mark Capital provide these position papers in response to certain questions and inquiries we receive during our most recent client meetings. As you know, our intention is to make our process as interactive and transparent as possible to our clients, so we remain partners in achieving your long-term objectives.

TOWARD ENERGY INDEPENDENCE AND A U.S. MANUFACTURING RENAISSANCE

While we remain cautious in our overall view about the global economic outlook because of too much debt in the system and continue to be concerned about “crisis risk” related to politically motivated policy mistakes, we are optimists by nature and are always looking for the “glass is half full” side of the story. In the spirit of Joseph Schumpeter (the economist that popularized the theory of creative destruction), we currently see the seeds of a possible U.S. manufacturing rebirth led by transforming advances in energy technology. Since it is important to remember that proper investment strategy should not be based on the likelihood of a single outcome (that is speculation, not investment), we wanted you to know that we are balancing our cautious views with some positive considerations.

What do the names Haynesville, Fayetteville, Marcellus, Utica, Barnett, Eagle Ford, and Woodford have in common? They represent recent energy discoveries in Louisiana, Arkansas, Pennsylvania, Ohio, North Dakota, Texas, and Oklahoma, respectively. Over the two decades prior to 2000, domestic natural gas reserves declined by about 10%. In a remarkable turnaround, natural gas reserves have doubled during the past decade and are now growing by nearly 10% a year. This is the untold story of the U.S. energy industry.

What changed? In a word – technology. New drilling techniques have unlocked trillions of cubic feet of gas and billions of barrels of oil from shale formations. As a result the U.S. now has, according to a recent report by the Congressional Research Service, the largest recoverable energy reserves in the world. The implications for our balance of trade, employment, and as a low cost feedstock for industry and transportation are significant.

Natural gas had been an unpredictable fuel for industrial and utility use due to its price volatility. Historically, high prices would increase production while the resulting glut would then drive prices back down, and 100% moves in a year were not uncommon. That has now changed, thanks to lower cost shale production. Over the past three years the price of natural gas has remained reasonably stable, currently selling for under \$4.00 per thousand cubic feet. This is half the price of natural gas in the U.K. and a fourth the price of natural gas in Japan. Based on energy content, \$4.00 natural gas is roughly equivalent to \$25 barrels of oil.

Yet it is not only natural gas that defines America’s energy future. The latest shale discovery, the Utica Shale, is a deep zone lying under gas shale layers in Ohio and Pennsylvania. The Utica Shale is rich in oil and liquids with initial reserve projections of 25 billion barrels – a level equal to the remaining reserves under the North Sea. The U.S. currently imports approximately 12 million barrels of oil per day while producing about 6 million barrels per day. A recent Wood, Mackenzie study forecasts that in 15 years domestic production could expand by 4 million barrels per day, and current indications suggest that could prove conservative.

Environmentalists view shale drilling as their next stand against fossil fuel production in the U.S. Claiming competitive trade secrets, natural gas drillers have been reluctant to disclose the technology behind “fracking”, the process by which water and chemicals are pumped into the shale formations under high pressure to release the trapped hydrocarbons. That is now beginning to change as companies are refor-

mulating their chemical processes to minimize potential environmental issues. To date there have been no reported broad scale environmental problems from fracking. On the positive side, natural gas is the cleanest burning fossil fuel, reducing greenhouse gas emissions by up to 50% relative to coal. However, as the industry is relative young, it is premature to reach the final environmental verdict. But as fracking spreads to more states, environmental issues will remain in high profile, and the possibility of restrictive regulations cannot be ignored. This is the one caveat in the story.

But our focus here is on the economic implications of domestic energy development. There are nearly 200,000 skilled jobs in oil and gas exploration and production, growing at about 10% per year. One of the first beneficiaries of this new trend, North Dakota with the Barnett Shale, is enjoying dynamic economic growth with an unemployment rate of 4%.

Employment gains from exploration and production are just the beginning. The bigger story is what a low cost, stable energy supply will do for American manufacturing and transportation. Ethylene, for example, is a key feedstock in plastics, and the U.S. is now the second lowest cost ethylene producer in the world, after Saudi Arabia. Natural gas liquids are to a chemical company as flour is to a bakery. (China has no competitive advantage here as they must import energy to meet their growing demand.) The American Chemical Council estimates that a 25% increase in ethylene production could add 400,000 jobs throughout the value chain. Dow Chemical plans to restart an ethylene plant in Louisiana next year with a new green-field plant scheduled for 2017. Royal Dutch is planning a similar facility in Appalachia. This is just the chemical industry. In the steel industry, for example, U.S. Steel is studying the conversion of blast furnaces from coal to natural gas.

Then consider the broader implications of cheap, plentiful domestic energy on two other industries: utilities and transportation. Natural gas was a fuel of choice for new electric utility plants in the 1950's that were not located near coal sources. That changed as its price and availability became less predictable. A return to natural gas as a utility feedstock will reduce greenhouse emissions while postponing the need for a new nuclear power building cycle. In transportation, consider the economic benefit of a relatively stable gasoline price. Looking further down the road, a private company is beginning to construct liquefied natural gas fueling stations on interstate highway corridors as our interstate truck fleet gradually converts from diesel fuel to natural gas, reducing both cost and pollution.

Energy related economic opportunities are beginning to spread from North Dakota to West Virginia, Pennsylvania, Ohio, and even New York (not to mention Texas and Oklahoma). It is estimated that for every job directly created, up to three service and support jobs appear. Newly rich farmers with mineral rights in the Dakotas and the Ohio-New York shale corridor are ordering record levels of agricultural equipment. In Youngstown, Ohio, the French company, Vallourec, is building a one million square foot facility to produce steel tubing for the energy industry. Think of the economic impact as a concentric circle with energy production at the center, radiating out into the local and regional economy. Today's mantra should be "go north and east, young man."

Yet this is a relatively new phenomenon. Domestic oil production had been declining through 2008, bottoming at about 5 million barrels per oil a day. Today we are approaching 6 million barrels, nearly a 20% gain in three years. Natural gas production bottomed at about the same time, but in the four years from 2006 to 2010 production from shale formations increased from one trillion cubic feet a year to nearly five trillion cubic feet, with growth continuing. Shale gas now accounts for about 25% of total domestic natural gas production. As it takes time for industry to respond to a new fuel source, potential benefits are just beginning to develop.

Cheap and plentiful energy feedstock could not come at a better time for the U.S. as our competitive position relative to China is already improving. Chinese manufacturing costs are rising by more than 15% a year relative to the U.S., driven by a rising exchange rate (5%-7%), by Chinese domestic inflation (6%-8%), and by rising real unit labor costs (at least 6%-8%). The Financial Times has estimated that the Chinese minimum

wage is currently rising at a 20% rate. China could soon face a labor shortage as three decades of its one child policy begins to reduce the labor force growth rate.

While unit labor costs in China still remain well below those of the U.S., the rate of increase is beginning to bring other factors benefiting our domestic manufacturers into play. These factors include logistics and transportation, quality control, technology control, and the flexibility to react to changing market conditions. The Boston Consulting Group coined the term “reshoring” to describe the return of manufacturing jobs to the U.S. They believe the tipping point will come by 2015 as higher value added industries such as electrical equipment, electronics, and auto components will increase reshoring, adding up to 3 million domestic jobs by the end of the decade – one fourth in manufacturing and three fourths in related service industries. (These industries are less likely to relocate in the next tier of developing countries such as Cambodia, Bangladesh and Vietnam than, for example, textile manufacturing.) We may begin to see the “Made in America” label reappear on a broad range of industrial and consumer goods.

There are about fourteen million unemployed Americans today, at least by official statistics, creating a 9% unemployment rate. Economists consider a 5% rate close to full employment, and to get there means adding about six million jobs, roughly the number lost to China over the past decade. We are about to witness the start of a gradual, but fundamental reversal of this trend.

Both stories, increasing domestic energy production driven by U.S. drilling technology and the reshoring of American manufacturing driven by rising Chinese labor costs, are just beginning to be told. While they are both powerful in their own right, the intersection of the two provides the best story of all. Domestic energy costs are declining at the same time as import prices of consumer goods are rising. This not only reinforces the reshoring trend in finished goods but will also create export opportunities for process industries and capital goods. Combined with growth opportunities in the energy industry itself, we have defined a potentially powerful secular trend.

Secular trends last longer than expected, gaining strength along the way (consider the 30 year decline in Treasury bond yields, for example). They meet with initial skepticism (energy independence/ manufacturing renaissance – are you kidding?) and are not fully embraced until well into their development. This creates multiple opportunities for employment, business, and investment that last for many years before becoming fully exploited. We are early in the secular story of domestic energy development reinforcing a domestic manufacturing renaissance, creating a potentially game changing economic scenario.