

Chat Reynders

Chairman and CEO

Reynders, McVeigh Capital Management

www.reyndersmcveigh.com

Patrick McVeigh

President and Chief Investment Officer

Reynders, McVeigh Capital Management

www.reyndersmcveigh.com



WORKFORCE RISING: WHY U.S. MANUFACTURING IS POISED FOR A COMEBACK

There is no shortage of areas that were crippled by the financial crisis, and United States manufacturing ranks high on that list. Production jobs were already fleeing overseas in favor of inexpensive labor in the mid-2000s, and the combination of the domestic consumer recession and a burst of Chinese market dominance only amplified the situation. Manufacturing – and indeed, innovation – would have a difficult return to prominence.

Signs indicate, however, that manufacturing is making a comeback sooner than expected. U.S. companies are feeling pressure based on high unemployment, historically high profit margins, and historically low labor costs. It is simply becoming harder for companies to justify moving jobs offshore.

Economics and innovation each have a hand in resurrecting American manufacturing. Advances in production technology are creating new opportunities; fracking, for example – the process of fracturing shale to reach natural gas and oil deposits – is demonstrating the dramatic impact that innovation can have. Fracking is the dominant technology being used to access the 14,000 square mile Bakken rock formation in North Dakota, which has brought thousands of workers and higher earnings to the region. Unemployment in the state has dropped from 4.3% in 2009 to about 3% in 2011, compared to a national average of 8.6%.

In the auto industry, the emphasis on domestic production has taken center stage in some labor negotiations. GM pledged to invest \$2.5 billion in U.S. factories and to retain domestic work that was slated for outsourcing to Mexico; similarly, Ford signed a new labor contract in October that calls for 12,000 new jobs and a total of investment of \$16 billion in U.S. jobs

and plants by 2015. Meanwhile, Mercedes' total new investment in its Tuscaloosa, Alabama plant is expected to hit \$2.4 billion by 2014, and work in the facility will create 1,400 jobs.ⁱ

As the momentum gains in different industries, three drivers are breathing life back into manufacturing, and each of them points to important near term investment opportunities in companies that stand to benefit:

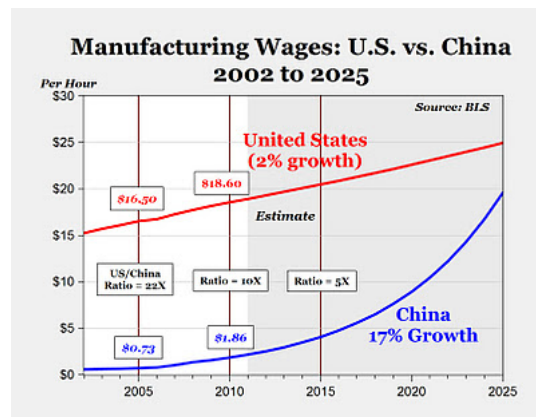
From offshoring to homeshoring

Globalization is gradually coming full circle as companies explore homeshoring – bringing their manufacturing workforces back to America. Cost advantages of outsourcing production are becoming less significant, and despite (or perhaps because of) the difficult economic climate, the U.S. is in a position to compete for jobs.

Simply put by a CNN commentary, “America was the key force in popping open the Pandora’s box of commercial and cultural globalization...But the globalization game is an inherently American game, and it will take a great deal of luck, strategy, and determination for someone else to play the game better.”ⁱⁱ

Companies such as Caterpillar, NCR, and previously mentioned auto companies have already begun bringing production jobs home. While the move may be slow, specific shifts point directly to the idea that homeshoring is a reality.

- *Shrink in Wage Gap.* As the wage gap between the U.S. and China shrinks, the days of cheap labor in China are waning. The cost of wages in China is on the rise at a predicted 15-20% annually, while U.S wage rates are increasing at a much slower 2% clip.ⁱⁱⁱ
- *Transportation Costs.* It is no secret that transportation costs have drastically increased over the past few years due to the high price of oil; companies that outsource manufacturing are more aware of this with every mile they must ship their product. By reallocating resources to the U.S., companies can reduce the distance to the point of sale and eventually benefit from more accessible, cheaper fuel in domestic natural gas. As Jeff Rubin notes in his recent book, “Those once high-paying manufacturing jobs...may soon be coming back home. With every dollar increase in the price of the bunker fuel that powers the



container ships that ply the Pacific, China's wage advantage becomes less and less important."^{iv}

- *The Big Picture.* Less obvious but just as significant is a fundamental shift to a more holistic view of production. Industries are taking a closer look at the full cycle of product delivery as reflected by the Total Cost of Ownership (TCO). TCO evaluates the entire cost incurred by companies when purchasing a manufacturing part, including the burden of controlling quality and delivery, transportation, oil consumption, inspection of labor, inventory carrying, and freight and packaging.^v If the buyer performs a cost-benefit analysis of the TCO, they would find it is cheaper and more predictable to keep manufacturing close to home.

U.S. resources mean U.S. jobs

Homesourcing will come to fruition in the near future, but the full complement of outsourced production will likely be dispersed throughout the world. Other regions such as Vietnam and the MINT countries (Mexico, Indonesia, Nigeria and Turkey) will also see an increase in production jobs.

It is not the return of overseas labor alone, then, that will reignite manufacturing in the U.S. Job creation in domestic industries will be a crucial second pillar, and resource industries such as water and natural gas will help spur momentum.

Water stress is a global issue, and the U.S. is central to stemming the tide. As the Earth's population grows and demographic shifts favor more arid regions, dramatic steps are needed to ease shortages— even absolute water scarcity – for large segments of the world. Less than 3% of water is potable, and of that 70% is locked in the form of ice and snow cover. Many regions are already approaching “peak water,” a condition under which usage rates surpass the natural rate of replenishment.

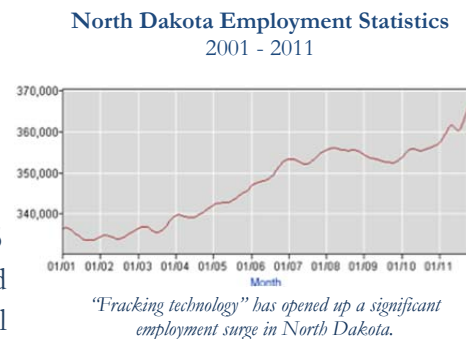
Importantly for the manufacturing sector, the U.S. is home to the largest reserves of water on the planet. As the hub of innovation for extending the resource, there is significant growth in domestic companies focused on conservation and desalination technology – both of which will be critical to augmenting the fresh water supply. Advanced metering technologies will also be central to conservation, and desalination is expected to continue upward momentum from the past decade, with a growth rate of at least 10% per year.

Natural gas is also showing tremendous upside in the U.S. The resource stands on the leading edge of disruption in the energy and transportation industries, and is emerging as

a top option for a transition fuel as the world trends slowly but surely towards alternative energy sources. With abundant supply available domestically at a fraction of the cost of oil, advances in portability, and test cases that bear out the efficiency of natural gas, it is an attractive commodity for investors seeking to capitalize on the near-term state of energy adaptation. And given the price discrepancy for natural gas between the U.S. and China and Europe, there is opportunity for massive production and export.

In terms of availability, the EIA estimates there is 1,500 trillion cubic feet of recoverable natural gas in the United States, with approximately half of this located in shale formations. The finds, concentrated largely in Texas, Louisiana, Arkansas, and Appalachia, have generated domestic natural gas supplies that could last for an estimated 120 years. This will not only help the transportation issue, it will also lead to more efficient industrial processes; the wealth of natural gas may give U.S. manufacturing a competitive re-footing, which will in turn stoke industrial demand. In March, for example, Nucor – the country's largest steel producer – began building a \$750 million "direct-reduced-iron" plant in Louisiana. The company will superheat natural gas and then mix it with scrap iron and iron ore pellets.

There is growing recognition of the potential booms in employment and commerce on the line. The previously mentioned North Dakota boom is one example, and PricewaterhouseCoopers LLC estimates that natural gas investments could create 1 million U.S. manufacturing jobs over the next 15 years. States like West Virginia, Pennsylvania, and Ohio are squaring off to create incentives that will attract and retain plants locally.^{vi}



The path is not completely clear for unfettered production; environmental protection rules set by state and federal regulators will play a role in setting new guidelines. Some environmentalists view shale gas as a potential threat to clean water supplies, which could bring about regulatory hurdles that will slow the growth of natural gas resources.

Innovation sets new standards

Domestic innovation will also help compensate for the reduction in traditional manufacturing jobs. 3D printing, for example, was once a quaint idea that will eventually have the ability to transform entire industries. The emerging technology, also called

There are a number of strong companies that are poised to both drive and profit from the rebirth of manufacturing in the U.S.:

► **Stratasys** [NASDAQ:SSYS]

Stratasys designs and manufactures 3D printers with the capability of producing physical models, prototypes, and end-parts based upon computer generated designs, dramatically lowering manufacturing costs and time. There is great potential in 3D printing that will change manufacturing in the long term.

► **Itron** [NASDAQ:ITRI]

Itron is the world's largest manufacturer of electric, natural gas, and water meters, controlling 10-20% of the global market. All metering companies have considerable growth potential as governments across the world work to improve electric and water efficiency.

► **Gasfrac** [TSX:GFS]

Gasfrac provides fracturing for companies that produce oil and natural gas from complex formations, which allows energy companies to drill in areas that were previously inaccessible. Today, almost 90% of wells drilled are fractured.

► **ADP** [NASDAQ:ADP]

ADP provides Employer Services, PEO Services, and Dealer Services to businesses of all sizes; as the economy recovers, so will employment. A larger workforce means a larger book of business, which will bring significant growth potential to ADP.

additive manufacturing, builds layers of material to create finished objects; items can literally be produced from the manufacturing equivalent of a desktop printer.

3D printing may in the near term vastly reduce production lines and wasted material to streamline manufacturing to a new level of efficiency. A process that currently takes six weeks to create a product could shrink to six hours; in fact, engineers in Canada have already tested the idea by producing a car directly from the printer. The “Urbee” is not only operational, it is efficient – the hybrid boasts 200 mpg on the highway.^{vii}

This may well be just the beginning. “A technological change so profound will reset the economics of manufacturing,” noted *The Economist* in a 2011 article, adding that such technology can inspire innovation. “This will be a boon to investors and start-ups, because trying out new products will become less risky and expensive.”^{viii}

The search for new technology could literally return its focus to millions of innovators in millions of garages – each with a 3D printer on hand.

Such technology is one leap towards shorter, less expensive cycle times and delivery routes. The same thinking impacts investments and perspectives on natural gas. In Los Angeles, all 2,200 of their buses run on natural gas,^{ix} as do 20% of all busses across the nation. Further priming the engine, President Obama has pledged that the federal government will buy only alternative fuel vehicles by 2015.^x As the fuel becomes more prevalent, domestic production and supply chains will undoubtedly see the benefit.

A perfect storm of economic conditions displaced manufacturing from the U.S. years ago, and there is no new perfect storm on its way to bring them back. However, manufacturing will return as China struggles with growing infrastructure and the emergence of its middle class; as industries built around U.S.-based resources solidify; and as innovation brings production to new levels of efficiency. There is no quick fix, but the gradual evolution of disparate elements is dispersing the clouds and giving rise to a new and viable landscape for American manufacturing.

About the Authors

Charlton Reynders, III, Chairman and CEO of Reynders, McVeigh Capital Management, brings more than 20 years of experience in investment management and social venture investing to Reynders, McVeigh Capital Management. In addition to his leadership in the traditional investment management world, Chat has structured and funded public/private partnerships that have brought more than \$150 million in revenues to leading cultural institutions around the world.

In this vein, Chat has for decades produced award-winning, socially oriented IMAX films with an emphasis on climate change. Chat's focus on this area led him to his role as a Director on the Board of the One World One Ocean Foundation, an organization committed to increasing awareness of the delicate state of today's oceans. He also sits on the advisory boards of Project Adventure and the MacGillivray Freeman Educational Foundation.

Chat served as a senior officer and director of new business at Lowell, Blake & Associates. He oversaw growth in assets under management at that firm from just over \$200 million to nearly \$700 million, and worked as a senior equity strategist to lead key institutional relationships, advising on more than \$1 billion in outside assets. He previously served as Executive Director of The Whale Conservation Institute, the nation's leading independent cetacean research center, which was founded under a grant from the MacArthur Foundation.

Patrick McVeigh, President and Chief Investment Officer of Reynders, McVeigh Capital Management, is widely recognized as a pioneer in bringing traditional investment management together with socially responsible investing. With 26 years of experience in the industry, he was one of three original employees at Trillium Asset Management. His research there was a key factor in the growth of assets from startup to \$700 million.

A voice of reason and leadership within the socially responsible investing realm, Patrick has served as managing editor of *Investing for A Better World*, authored numerous articles on ethics and ecology, and contributed chapters to *The Social Investment Almanac* (New York: Henry Holt, 1992) and *Working Capital: The Power of Labor's Pensions* (Cornell University Press, 2001).

Since 1995, Patrick has been project manager for a series of groundbreaking studies conducted by the Social Investment Forum, tracking the growth of socially responsible investing and its implications in the investment markets. He also served on the boards of SEED: The Haitian Community Loan Fund, directing approximately \$1 million to peasant cooperatives in Haiti to create businesses; the Social Investment Forum; and the San Jose Food Co-operative.

Endnotes

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