Viewpoint

BNY MELLON

Potential Beneficiaries of a US Manufacturing Renaissance

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Executive Summary

Many incremental changes over the past decade have allowed US manufacturing to become progressively more competitive globally. Recently, the cumulative effect of this improvement in competitiveness has reached a tipping point that may set the stage for a revival in US manufacturing employment. Although much press and investor discussion has identified investment opportunities in multinational manufacturing giants as a result of this, our view is that the best opportunities lie elsewhere in the US economy. A significant revival in manufacturing employment growth would be likely to substantially improve the employment and wage outlook for the American labour force. That, along with higher manufacturing and industrial activity occurring within the US, would lead to investment opportunities in small and mid-size US-based component suppliers, transportation companies, raw material producers, and regional retailers and banks.

Introduction

In recent months, the popular press has begun carrying stories of a "US Manufacturing Renaissance." Examples include a New York Times article titled "Natural Gas Signals a 'Manufacturing Renaissance'"[1] and an Economist cover with the headline "The third industrial revolution."

At The Boston Company Asset Management, LLC, we have been following this topic for almost two years, ever since we identified a change in tone in our meetings with industrial management teams. After years of sending manufacturing capacity abroad, the managers were beginning to question the assumptions underlying that decision. Despite substantial excess capacity in the US, some began considering expanding their American manufacturing footprint for the first time in many years.

Despite all the latest talk of a US manufacturing renaissance, we believe its potential impact on US investment opportunities remains misunderstood. Our perspective is that if the US is indeed a more competitive manufacturing location than it has been in

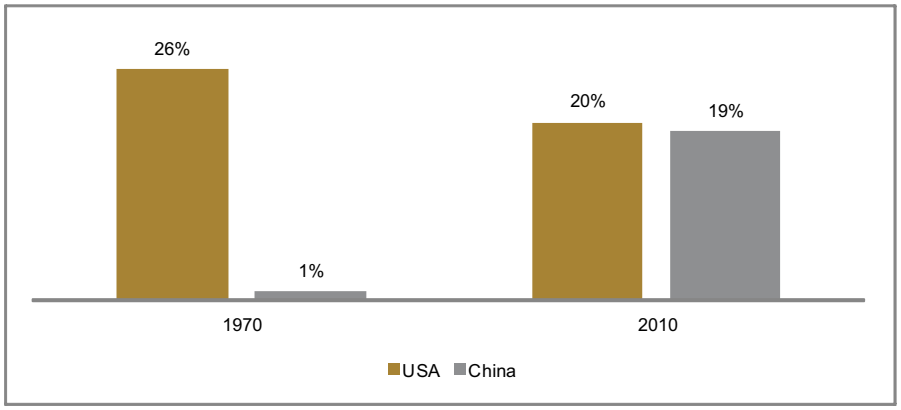
a decade, manufacturing capacity will be added and manufacturing jobs will be created, which should drive US economic wage growth.

As a result, investment opportunities will be found across the breadth of the US economy in the small and mid-size US-focused industrial suppliers and in other sectors of the economy, such as banks and retail. Some investors suggest that large US-based manufacturing companies will reap significant benefits, but many such global firms are not tightly tied to the health of the American manufacturing economy. Domestic sales at the top three US manufacturers by market capitalisation, represent on average only 44% of revenue and their asset footprints are only slightly more tilted towards the US than their revenue.[2]

The Decline of US manufacturing employment

Over the past four decades, America has lost substantial market share of global manufacturing output. Since 1970, American share of global manufacturing output has declined to 20% from 26%. Meanwhile, China's share has risen to 19% from just 1% during the same period, gaining six points from the US, seven from Germany, four from the UK and two each from Italy, France and Japan. (See Chart 1.)

CHART 1: US AND CHINA SHARE GLOBAL MANUFACTURING OUTPUT

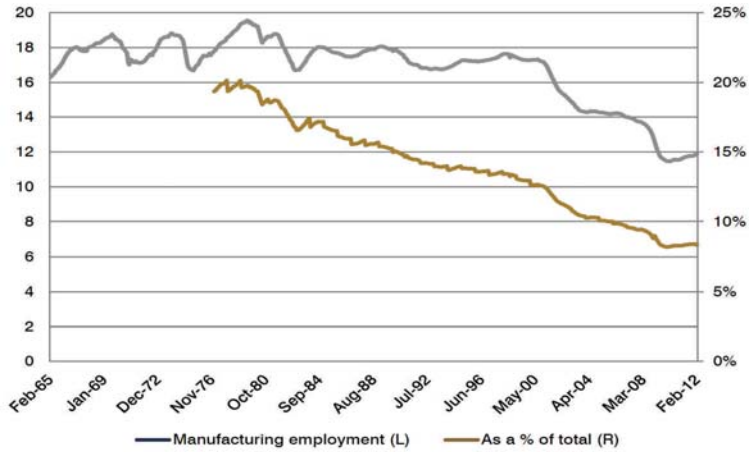


Source: UN Statistics Division, TBCAM

Between 1970 and 1990, American manufacturing employment did not decline, but rather lost share to the rapidly growing services jobs. The number of manufacturing jobs was around 17 million between 1965 and 1998, but in percentage terms, this represented a decline from 20% to 13% of the total US employment figure.

Between 1998 and 2010, manufacturing employment began a rapid decline with six million of American manufacturing jobs disappearing. In today's labour force base of 142 million people,[3] those jobs would reduce the unemployment rate by 4 percentage points. (See Chart 2.)

CHART 2: US MANUFACTURING EMPLOYMENT, 1965-2012



Source: US Bureau of Labor Statistics, TBCAM

The question to ask is why did US manufacturing jobs disappear so quickly? Much ink has been spilled trying to identify a single source, with most arguments centred on offshoring and productivity improvements. At that time, when management teams were deciding where to locate their production, they most frequently concluded that to send production abroad due to far lower labour costs, stable currencies, potentially lower raw material prices, ease of supply-chain implementation and low political risk.

A recent McKinsey report [4] concluded that more job losses occurred due to increased productivity rather than offshoring, but nevertheless estimated that if the US trade deficit were closed by improving the manufacturing trade balance, 2.2 million direct jobs would be created.[4] However, these factors are hard to separate because accurately quantifying productivity improvements and separating them from technological advancements are very difficult.

The implications of the hollowing out of US manufacturing employment spread far beyond the manufacturing sector. It created an excess supply of labour that has suppressed wages, as evidenced by the 7% decline in the median US real wages between 2000 and 2010.[5] Painful as this was economically and politically for the country, the decline in real wages may be one way in which the uncompetitive US manufacturing sector of the early 2000s healed itself.

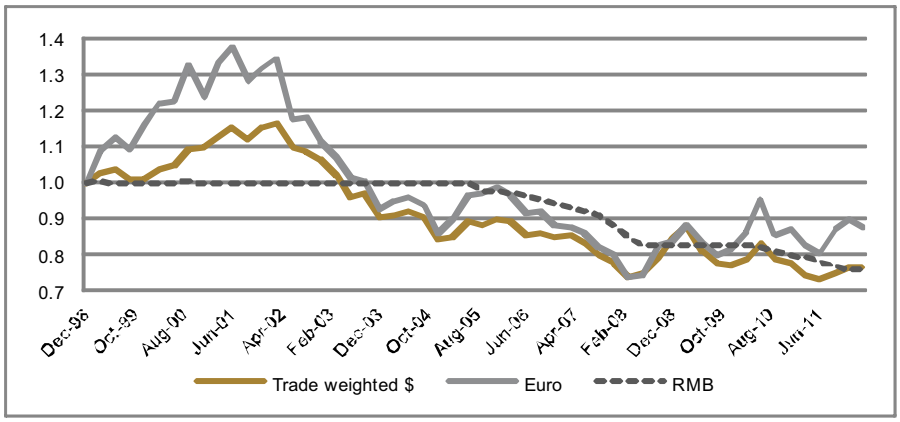
Why things may be different now

Quite a few factors that caused the rapid loss of US manufacturing jobs appear to be on the mend. None of these shifts is seismic on its own, but taken together, they are driving the change in tone we have heard from management teams and may herald the beginning of an improvement in US manufacturing employment.

1. The dollar has weakened.

The decline of the US dollar has reduced the relative cost of US wages and inputs in comparison with other locations. The US trade-weighted dollar index has fallen 30% since December 2000. The dollar has declined by 36% since its 2000s peak against the euro and 24% against the Chinese renminbi since the RMB began fluctuating in 2005. This is an important driver of the decline in US labour costs relative to other countries and also makes US exports more globally competitive. (See Chart 3.)

CHART 3: US DOLLAR DECLINE, 1998-2012



Source: Capital Markets Outlook Group, Bloomberg. TBCAM

2. Wage differentials have narrowed between US and key manufacturing economies.

Wages are an important factor for companies when deciding where to locate production. Although labour cost as a percentage of cost of goods sold for many manufactured goods is as low as 10%, wages receive a disproportionate amount of attention in any cost-benefit analysis because they can be so easily quantified.

According to Boston Consulting Group (BCG), in 2000 Chinese wages were 3% of American levels. Companies that produced high-labour-content goods were simply able to arbitrage lower wage rates in China. This has been most visible in apparel, where labour represents a particularly high proportion of the cost structure and shipping is inexpensive: China's share of global apparel exports leapt from 17% in 2000 to 32% in 2009.[6] In the past decade, as US real wages have fallen in real terms and lagged productivity growth, Chinese wages have risen six-fold, substantially exceeding productivity growth.[7] As a result, BCG estimates that for a typical auto component, US labour content was 2.85 times more expensive than Chinese in 2000, but by 2015, it will be only 1.65 times as expensive. Therefore the labour cost savings narrows from 65% to 39%. (See Chart 4.)

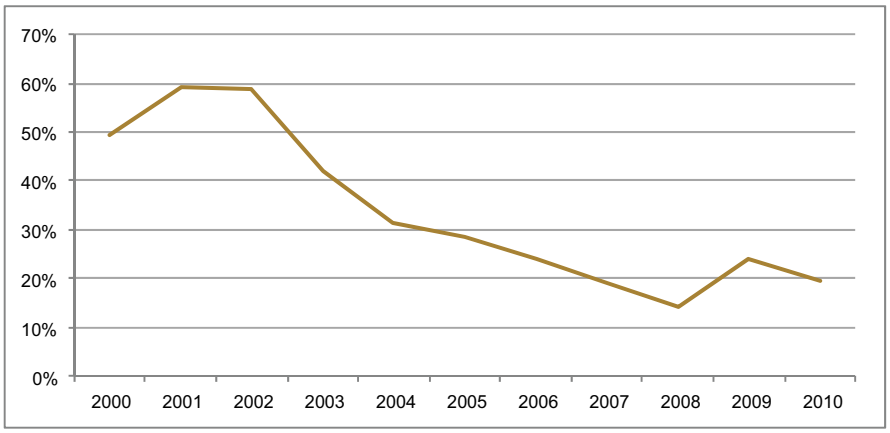
CHART 4: BOSTON CONSULTING GROUP'S CHINA COST DIFFERENTIAL ANALYSIS: ECONOMIES WILL DRIVE REINVESTMENT IN THE US

Imagine a company…	…with the following choices of location			2000	2015E
• U.S.-based auto parts supplier • Most customers are U.S. OEMs that manufacture in the U.S.	U.S., selected southern states	• Flexible unions/ workforce • Minimal wage growth • High worker productivity	Wage rate ($/hour)	15.81	24.81
			Productivity (%)	100	100
			Labor cost/part ($)	2.11	3.31
• Parts require eight minutes of labor, on average, in the U.S. • Labor represents one-quarter of the total cost of the part	China, Yangtze River Delta	• Scarce labor • Rapidly rising wages • Low productivity relative to the U.S.	Wage rate ($/hour)	0.72	6.31
			Productivity (%)[1]	13	42
			Labor cost/part ($)	0.74	2.00
			Labor cost savings ($)	65	39
			Total cost savings before transportation, duties, And other costs (%)	16	10

Source: Economist Intelligence Unite; Bureau of Labor Statistics; BCG analysis. 1 Average productivity differences between the US and China's Yangtze River Delta Productivity in the Yangtze River Delta region is assumed to grow at CAGR of 7 ~ percent over a 2000 baseline, slightly slower than overall Chinese manufacturing productivity (~8.5%) as other regions adopt more advanced manufacturing practices.

Competition with Chinese labour is a factor in how rapidly American manufacturing jobs are outsourced. More relevant to the potential for direct job creation is the differential between American and European wage levels. German dollar-denominated wages have increased significantly in the past decade, driving an improvement in relative US competitiveness. We believe this may explain why many of the new plants announced in the American South are being built by European companies seeking to manufacture goods destined for the US market. (See Chart 5.)

CHART 5: US HOURLY MANUFACTURING COMPENSATION: PREMIUM TO OECD AVERAGE, 2000-2010



Source: ISI Group, Bureau of Labor Statistics, TBCAM

Automation is an important determinant of the labour content of manufactured goods. Plant automation has developed greatly in the past decade. This initially cost jobs, as is apparent in a joke that is frequently told in the Rust Belt: "Did you hear that the new plant in town is being run by one man and a dog? The man feeds the dog, and the dog keeps the man away from the machines."[8] However, by having reduced the overall labour content in some goods, automation may bring incremental job growth to the US by allowing for more goods to be made here.

3. Natural gas prices have declined in America relative to global price levels.

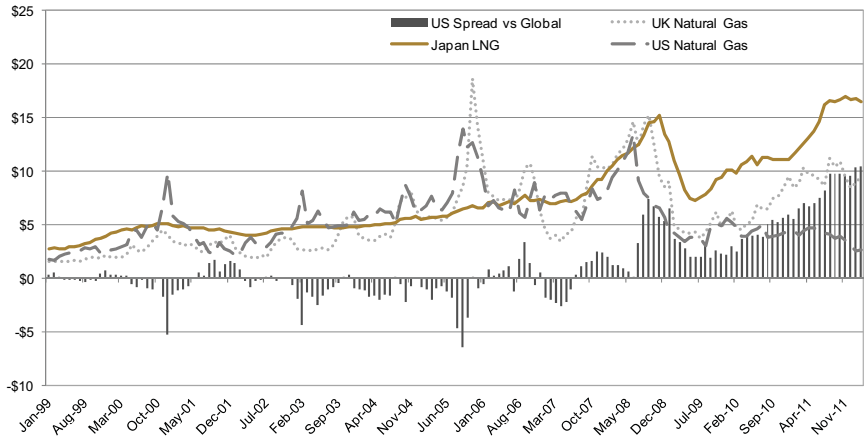
The recent drop in US natural gas prices from US$13 per million British thermal units (MMBtus) in 2008 (and also 2005) to approximately US$2/MMBtu today is a truly significant change. Recent technological improvements allowing for more, inexpensive production of natural gas and natural gas liquids (NGLs) in the US have led to a reduction in input prices for many manufacturing activities in America that has not occurred in other markets.

The decline in US natural gas costs has broad implications, all of which lower manufacturing costs in the US:

- Natural gas and associated NGLs are used as inputs in many energy-based industries such as petrochemicals, steel and fertilizers. These companies are more globally competitive due to increased natural gas production and lower prices in the US.
- Natural gas is used to generate electricity, which is a significant manufacturing input cost.
- Natural gas is already used as a transportation fuel for refuse trucks, and its use

for large-scale trucking is rapidly developing. The potential to displace high-priced oil as a transportation fuel has many positive implications for the US consumer and US trade deficit. (See Chart 6).

CHART 6: GLOBAL AND US NATURAL GAS PRICES AND THE SPREAD BETWEEN THEM



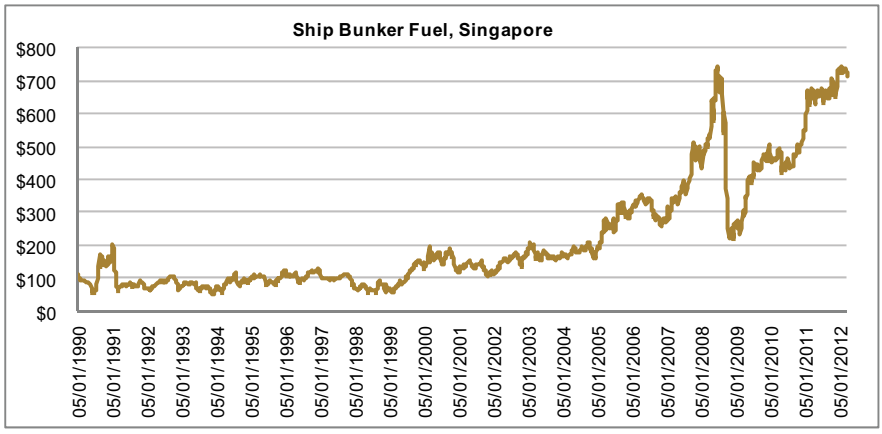
Source: Bloomberg, TBCAM. Global prices estimated via Europe/Japan average.

4. Global supply chains have become slower and more expensive.

The cost of shipping goods around the world has become more expensive due to higher fuel prices. A decade ago, the price of bunker fuel used to power ships that transport raw materials and finished goods worldwide was approximately 15% of its current level and had been flat for the previous decade.

Transport times have also lengthened due to port delays, container lines' implementation of slower speeds to minimise fuel costs, and the use of larger ships that take longer to load and unload. Longer transport times further increase costs by requiring excess stocks to be held or airfreight to be employed to rush goods to market. (See Chart 7.)

CHART 7: BUNKER FUEL PRICES, 1990-2012



Source: Dahlman Rose; Clarksons; TBCAM.

5. Various forms of volatility have become more apparent and thus a larger concern.

From fuel prices to financial markets, volatility has been the story of the past decade. This has made management teams much less willing to believe that factors such as wages, currency, and transportation costs and time will remain predictable. Recent years have shown management teams the risks they take when moving production abroad. Examples include nationalisation (such as Argentina's recent vote to take over the country's largest oil company); local Chinese governments declaring eminent domain over manufacturing sites; and proliferation of various types of intellectual property theft, from simple fakes to unauthorised production that is then sold internationally.

Regarding China specifically, companies to which we speak have expressed the sense that they were once treated as an important part of a national growth strategy 10 to 15 years ago. Now, however, the focus has shifted toward the development of "national champions," to which non-Chinese multinationals are beginning to play second fiddle.

6. Miscellaneous other factors point in the same direction: "nearsourcing."

Intellectual property has been and remains a key concern. Skilled labour and managerial talent have been described as often equally or more expensive in coastal China and Brazil than in America. We have heard the same about land, particularly in the Shenzhen area.

Quality control was expected to be quantifiable but turned out to be difficult to enforce, which has caused managerial headaches and sparked concerns about brand damage. Recent supply-chain disruptions have also raised the perceived risk of having production spread across the globe. In 2011 alone, the Japanese earthquake and tsunami disrupted the auto-parts supply chain, and severe flooding in Thailand disrupted the consumer electronics supply chain.

Jeffrey Immelt, chief executive officer of General Electric Co., summarised these dynamics in a recent article in Harvard Business Review in which he described a decision to bring appliance manufacturing back to an existing GE facility in Louisville, KY. He mentioned many of these factors as driving the decision. "Shipping and materials costs were rising; wages were increasing in China and elsewhere; and we didn't have control of the supply chain. The currencies of emerging markets added complexity. Finally, core competency was an issue. Complex trade-offs have always been involved in location decisions, but as these trade-offs shifted, around 2008, we came to the conclusion that outsourcing was quickly becoming mostly outdated as a business model for GE Appliances."[9]

What this means for investors

As equity investors, we are keenly aware that investment opportunity frequently occurs in times of change. One of our goals is to rapidly identify areas of potential change and their implications to take advantage of the opportunities they create. When we identify a potentially significant change, common sense and popular wisdom often treat it as impossible. Therefore, when we began discussing this topic, instead of taking a strong view before enough information was available to permit certainty, we asked ourselves (1) What do we expect to see if that change happens? and (2) If it does occur, what will be the best investment opportunities?

When we began asking ourselves those questions in relation to a US manufacturing renaissance, our goal was to find stocks that would be worth significantly more if the

hypothesis played out, yet had little downside if it did not. We believe that such risk/reward profiles are generally only available when evidence is still sparse, are willing to be early in such cases, and therefore initiated some positions prior to seeing substantial evidence confirming our hypothesis. We do now see evidence of our hypothesis in an increase in US manufacturing activity and employment. Yet, despite the proliferation of discussion about a US manufacturing renaissance, scepticism remains pervasive and we believe the investment opportunities remain misunderstood.

Signs we see that confirm this change is presently occurring:

When we began discussing this topic, we started to look for announcements about new plants or plant expansions in the US, as that would signal that our hypothesis was playing out. Anecdotally, we are seeing many headlines to support this.

- In auto, machinery and tire production, Nissan Motor Co., BMW AG, Maserati SpA, Kia Motors Corp., Caterpillar Inc., Michelin and Continental Tire have all announced plant investments.
- In Ohio, a series of investments are being made in steel production to support the shale gas industry, involving US Steel Corp., Vallourec & Mannesmann and Timken Co.
- Chemicals expansions are occurring across the country due to competitively low input prices. Expansions or new plants have been announced by Dow Chemical Co., Chevron Phillips Chemical Co., Sasol Ltd., Methanex Corp., TPC Group and Shell.
- GlobalFoundries Inc. is building a semiconductor manufacturing facility in Malta, N.Y.
- Watts Water Technologies Inc., a manufacturer of plumbing components, is expanding a New Hampshire plant to bring production back from China.
- Furniture makers are even shifting production back to the US, citing high transport costs.

In February 2012, US manufacturing payroll employment grew 3.8% on a rolling two-year basis, more rapidly than payroll employment ex-manufacturing, which grew only 2.5%. This is the first time since the 1980s that manufacturing employment has grown faster than non-manufacturing. We believe that this is due to many of the dynamics outlined above. According to Deloitte[10] , there are 600,000 jobs that cannot be filled because American workers lacked the appropriate skills. As this environment changes, the growth rate of manufacturing jobs could accelerate further.

Some investment opportunities created by this change in the US economic environment:

Given that the decade of the 2000s was one of rapid automating and offshoring of labour-intensive US manufacturing activity, driving the destruction of six million American manufacturing jobs, what does a change in this trend signify?

US and non-US companies are likely to open manufacturing facilities in the US, driving manufacturing job growth, which is particularly positive for the American labour force due to the employment multiplier associated with manufacturing activity.[11] For every manufacturing job created, one to two jobs are created in other industries. According to a supply-and-demand framework for labour, job creation should allow for better wage growth than recently experienced.

As this topic has become more frequently discussed, we've heard many investors indicating that these changes will be good news for US-based multinational manufacturing companies. However, we believe those companies have benefited from the trends of the past decade. They have built globally optimised manufacturing footprints: If the US becomes more competitive, those footprints may become a hindrance to profitability rather than a tailwind. In 2012, most US-based multinationals are earning as much as they have ever earned before, on higher profit margins than ever before. Excluding a few companies that are not representative due to spin-offs or excessive exposure to finance or defence, the top 10 US-based manufacturers by market capitalisation are expected to earn operating profits in 2012 that are 10% higher on average than their highest profit over the past decade.[12] These are not companies that are struggling alongside US manufacturing.

Our perspective is that due to the strong multiplier effect of manufacturing jobs, the beneficiaries of a US manufacturing renaissance will be found in small and mid-size, US-focused industrial suppliers and in other sectors of the economy. These include US-based component suppliers, transportation companies, raw material producers, retailers and banks. Potential beneficiaries even include state and local government budgets: Michigan recently announced a surprise US$500 million budget surplus due to unanticipated revenue growth, after a decade of decline.[13]

Potential winners

Growth in manufacturing production in the US could increase the size of industrial markets, which could lead to positive operating leverage and therefore improved profitability and returns on capital for suppliers. Potential winners include small and mid-size US-based suppliers to manufacturing, US-focused industrial distributors and US-focused automation companies.

Manufacturing activity that occurs within North America could drive growth in US freight volumes, because such activity tends to involve more intra-national movements as components are transported around the country. This could benefit trucking companies that move more onshore freight than imports, railroads that move raw materials and long-haul shipments, and suppliers to those industries.

Lower natural gas prices could improve profitability and returns on capital of US chemical companies, US natural gas producers (provided they can capture some of the higher global prices through liquified natural gas (LNG) or use of natural gas to displace oil as a transportation fuel), regulated electric utilities that may be able to earn regulated returns on new natural gas electricity plants, and unregulated electric utilities that generate electricity with highly efficient natural-gas-powered plants.

The benefits of more US manufacturing production, higher manufacturing employment and lower natural gas prices are likely to be found in pockets of regional strength. This could create opportunity for small regional retailers, which may see higher sales and improved profitability; regional banks, which may see lower losses and better loan growth; construction companies, which may benefit from increased construction activity; and electric and other utilities, which may see accelerated demand growth.

Potential losers

Some transport companies have gained reputations as benefiting from "secular growth," which might decelerate if demand growth shifts from international shipments to intra-national. Examples include container shipping lines, freight forwarders and potentially intermodal carriers.

Businesses for which selling prices decline along with natural gas but input costs do not are the most likely to be harmed by recent decline in natural gas prices. Examples include unregulated utilities that own inefficient or coal-burning plants and high-cost coal producers (coal prices may continue declining to reflect lower natural gas prices). Suppliers to these industries, such as manufacturers of coal railcars, may also be harmed by these trends.

Reasons a US manufacturing renaissance might stall

The future is uncertain, and the idea of a US manufacturing renaissance that improves the relative position of labour in the US economy is still mostly just a hypothesis. Any substantial reversion of the dynamics we have identified could cause these trends to revert, in which case the late Apple Inc. CEO, Steve Jobs, will have been correct when he reportedly told President Barack Obama, "Those jobs aren't coming back."[14]

We believe the most likely factor to revert would be the euro-dollar exchange rate, due to the typical volatility of exchange rates and the ongoing sovereign-debt crisis in Europe. Anything that reduces the price differential of natural gas between the US and the rest of the world is a significant risk, whether it comes from higher US prices or lower prices abroad. Lastly, there are strong manufacturing clusters outside the US − for example, in consumer electronics − that could keep some goods manufactured abroad for years to come.

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