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MADE IN THE U.S.A.: SMALL BUSINESSES AND A NEW DOMESTIC MANUFACTURING RENAISSANCE

HEARING

BEFORE THE

SUBCOMMITTEE ON ECONOMIC GROWTH, TAX AND CAPITAL ACCESS

OF THE

COMMITTEE ON SMALL BUSINESS
UNITED STATES
HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRTEENTH CONGRESS

SECOND SESSION

HEARING HELD
MARCH 13, 2014

Small Business Committee Document Number 113–060
Available via the GPO Website: www.fdsys.gov

U.S. GOVERNMENT PRINTING OFFICE

87–279 WASHINGTON : 2014

For sale by the Superintendent of Documents, U.S. Government Printing Office
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MADE IN THE U.S.A.: SMALL BUSINESSES AND A NEW DOMESTIC MANUFACTURING RENAISSANCE

THURSDAY, MARCH 13, 2014

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SMALL BUSINESS,
SUBCOMMITTEE ON ECONOMIC GROWTH,
TAX AND CAPITAL ACCESS,
Washington, DC.

The Subcommittee met, pursuant to call, at 1:00 p.m., in Room 2360, Rayburn House Office Building. Hon. Tom Rice [chairman of the subcommittee] presiding.

Present: Representatives Rice, Chu, Schneider, and McLane Kuster.

Chairman RICE. Good afternoon. This hearing is called to order.

I would like to thank the witnesses for appearing before the Committee today to discuss an issue of emerging importance to small businesses and our national economy—enhancing the growth of manufacturing production in the United States.

Over the last few decades, the United States has witnessed a significant decline in manufacturing jobs. While the value of the output of the United States manufacturers has more than doubled over the last 40 years, this growth in output value has not translated into similar increases into manufacturing employment. In fact, since peaking at more than 19 million jobs in 1979, total manufacturing employment has declined to a little over 12 million jobs today.

Many economists attribute these employment declines to increases in manufacturing productivity as the adoption of new technologies have permitted manufacturers to achieve higher output with fewer workers. Another factor is the emergence of new manufacturing opportunities overseas, many of which offer manufacturers lower labor costs compared to those in the United States. Over the last decade or so, this has led to a trend some have called offshoring, where domestic firms design and engineer products in the United States but conduct the actual manufacturing of the products overseas. However, there are signs that this trend is reversing as companies move production back to the United States, a trend commonly referred to as reshoring. In addition, the United States has begun to experience a process known as onshoring as foreign companies relocate some of their manufacturing from their home countries to the United States.

The purpose of today's hearing is to examine the extent to which manufacturing reshoring and onshoring trend is occurring—what factors are influencing it, what policies are necessary to help it reach its full potential, and what growth in American manufacturing means for small businesses.

Before I introduce today's witnesses, I would like to yield to Ranking Member Chu for her opening statement.

Ms. CHU. Thank you, Mr. Chair.

American manufacturing has been the nation's economic engine throughout much of the 20th century. The country rose to its place as a global economic superpower as customers clamored for the latest American-made products from planes to cars to television sets. Our robust manufacturing sector employed tens of millions of Americans and helped build the middle class. However, manufacturing's role in the U.S. economy has changed considerably since the '60s. As the nation flourished, our economy evolved, moving away from manufacturing and more towards service-based industries, such as healthcare, hospitality, and financial services. Simultaneously, countries like China and Brazil went through their own industrial revolutions, providing cheap labor and resources to become manufacturing epicenters. While the U.S. remains one of the most productive nations per manufacturing employee, offshoring has resulted in a loss of approximately 7.8 factory jobs since 1979.

In a positive development, U.S. manufacturing has witnessed resurgence in the past few years. In fact, the country's exports, a key measure of manufacturing activity, has been growing more than seven times faster than GDP since 2005 and are now at their highest levels in 50 years. As U.S. manufacturing output has increased, the favorable economics of reshoring has spurred many U.S. businesses to bring factories and jobs back to America.

A number of factors are leading to reshoring of manufacturing to the U.S. First, the competitiveness of China's manufacturing hub is eroding. Factory wages have been increasing by double digits each year since 2000, bringing those more in line with the U.S. manufacturing wages. Second, the U.S. is in the midst of an energy production book. Cheap domestic energy provides a significant competitive advantage for energy-intensive industries, like steelmaking.

At the same time, overseas transportation costs have skyrocketed, increasing more than 135 percent en route across the Pacific. These factors have combined to make the U.S. a very attractive option for new manufacturing opportunities.

As such, a recent Boston consulting group report indicated a majority of the nation's largest companies, over a billion dollars in revenue, are planning to move manufacturing back to the U.S. This, in turn, will have such a positive impact on our nation's small business community. Many small businesses form relationships with larger businesses as suppliers. These supply chain relationships inject over $1.5 trillion into our small business economy. As more large manufacturers reshore their operations, these figures are only going to increase.

Small businesses have also benefitted from world demand for "Made in the USA" goods and cheap shipping rates. According to the census, small and medium sized businesses account for 97 per-

cent of all exporting firms and sent $460 billion in goods overseas in 2012, which is a $10 billion increase year over year.

As the U.S. manufacturing revival continues to gain steam, we must be cognizant of potential stumbling blocks. For one, U.S. manufacturing has become sophisticated as technology has advanced over the past 25 years. This has led to a shortage of workers with the necessary skills to work in these factories even when there are millions of unemployed Americans looking for work. As the U.S. becomes an attractive destination for new manufacturing facilities, workforce training programs must adapt to provide the skills necessary.

We must also remember that economic growth depends on innovation. Research and development fuels technological advancement and is critical in fostering the high-tech enterprises that create new jobs. Unfortunately, the federal policy shift from domestic investment to deficit reduction could have severe implications for U.S. competitiveness in international markets and for manufacturing jobs. Going forward, we must ensure federal funding for research and development is not left on the cutting room floor.

At today's hearing, we will examine the state of U.S. manufacturing and the outlook for future expansion and job creation. Over the past few years, the U.S. has closed the competitive gap with its overseas competitors; however, the manufacturing revival still faces headwinds.

I would like to thank our witnesses in advance for taking time to be here today. Thank you, and I yield back.

Chairman RICE. Thank you, Mrs. Chu.

If anyone has an opening statement, I ask they submit it for the record.

I would like to take a moment to explain to you the timing lights in front of you. You each have five minutes. The lights will start out green. When you have one minute remaining, the light will turn yellow. Finally, it will turn red. And I am going to be flexible on that, but try to stay as close to the five minutes as you can.

I would now like to yield to Congresswoman Kuster, a member of the Full Committee so that she may introduce today's first witness.

Ms. KUSTER. Thank you so much to Chairman Rice and Ranking Member Chu for organizing this important hearing on reshoring and the trend in American manufacturing.

By making smart, targeted investments and promoting programs that help our manufacturers succeed, we can keep our manufacturing sector growing and creating good, middle class jobs for years to come.

New Hampshire is home to approximately 2,100 manufacturing companies. With our skilled workforce, first-class universities, and community colleges, successful public-private partnerships and high-tech businesses, New Hampshire is helping to lead an American manufacturing renaissance. During business visits through my Congress at Your Company series, I have met manufacturers who are committed to developing innovative technologies and creating good American jobs, and it is so encouraging to see evidence of companies reshoring their operations and jobs to the United States

and to see talented people, like Shirley Mills who is with us today, advocating for this critical movement.

Ms. Mills is a director and senior research analyst at The Boston Company and a resident of my district, Windham, New Hampshire. She graduated from Columbia University with a BA in Economics and earned an MBA from Harvard Business School. Ms. Mills started her career at Goldman Sachs, and also worked as an analyst at Steinberg Asset Management before joining The Boston Company in 2007. At The Boston Company, a global investment management firm that uses quantitative research and analysis to provide investment advice to clients, Ms. Mills specializes in the industrial and utility sectors. Her insightful research on the global competitiveness of American manufacturing firms and the corresponding rise in manufacturing employment in the U.S. is helping to develop a stronger understanding of this important trend.

Last year, I joined her husband, Steve Papa, the vice president of Parallel Wireless at a roundtable in Nashua, New Hampshire, to discuss developments in our innovation economy.

Ms. Mills, thank you for testifying today on this important issue for American manufacturing, and thank you again, Mr. Chairman and Ms. Ranking Member, for giving me this opportunity to welcome a fellow Granite Stater to the Small Business Committee. Thank you.

STATEMENTS OF SHIRLEY MILLS, DIRECTOR, THE BOSTON COMPANY; ROBERT HITT, SECRETARY, SOUTH CAROLINA DEPARTMENT OF COMMERCE; KEVIN HARBERTS, PRESIDENT/CEO, KRYTON ENGINEERED MATERIALS, INC.; MEI XU, CEO, OWNER, CHESAPEAKE BAY CANDLE

STATEMENT OF SHIRLEY MILLS

Ms. MILLS. Thank you, Chairman and Ms. Kuster for the opportunity to speak with you today.

I would first like to quickly address the dynamics that drove manufacturing activity to leave the U.S. and go abroad, many of which have now reversed and may be encouraging manufacturing growth in the U.S.

Several years ago I published a white paper on this topic, citing a number of reasons for a then potential shift of manufacturing capacity back to the U.S. The reasons that I highlighted then remain the case today. I would like to quickly address each.

A weaker dollar has played a role in making the U.S. more competitive and that has continued to remain low, indicating that this trend should continue. Wage differentials, as mentioned by Mrs. Chu, have narrowed between the U.S. and other key manufacturing economies, both Europe and China. Energy costs, due in large part to U.S. innovation and entrepreneurialism, have declined in the U.S. relative to global levels, which supports ongoing manufacturing strength in the United States, as well as expansion of capacity by U.S. chemical and refining companies. And in recent years, global supply chains and transportation costs have become slower and more expensive, and in many ways, riskier and more volatile, such that companies are less comfortable taking on the working capital needs in order to send capacity abroad.

So my belief is that conditions do exist for reshoring, and it is happening. Recent analysis by The Economist cites 100 firms that have reshored manufacturing from appliances to high-tech devices. The Wall Street Journal recently highlighted a number of yarn companies that are spending millions of dollars on new capacity in North Carolina textile country and hiring hundreds of people. None of the companies mentioned in that article is U.S.-based, but it is an expansion that is creating jobs in the U.S. and opportunities for U.S. companies.

Sometimes it is difficult to see significant trends in aggregate data, so it is worth noting that manufacturing employment is improving much more rapidly in areas of the United States that are benefitting more directly from lower energy prices, and in the economy as a whole, manufacturing employment has stabilized for the first time in decades.

The cited willingness of large companies to invest in new capital spending in the U.S. is improving, which is very positive for the manufacturing employment outlook. According to Consultancy ISI Group, willingness to invest in capacity in the U.S. has been improving for the past few years.

I would like to now address some policies that I believe can encourage this reshoring trend.

The first is policy consistency and simplicity. Constant change in the regulatory and tax environment creates a headwind to decisions of any sort, particularly investment decisions. The industrial management teams I meet with very often cite policy uncertainty as one reason they are investing so little in the U.S. Comments about the level of policy and regulatory uncertainty felt by management teams are so frequent that they seem clichéd to me at this point.

With regard to energy policy, this area will become increasingly important to U.S. manufacturing in coming years. As I am sure you are aware, the U.S. now has minimal exports of LNG and crude oil for a variety of economic and regulatory reasons. If exports increase, the global price differential that I mentioned between U.S. energy and global energy prices should narrow, which would weaken U.S. manufacturing momentum, particularly in industries with high-input costs.

As an equity investor, I constantly observe both the madness of crowds and the importance of compelling stories, and so I would like to highlight the importance of attention to success. The dominant story of the 1980s through the 2000s was offshoring. In some cases it made economic sense for manufacturers, but in other cases, managers simply followed the herd. I have now heard many stories in which a narrow focus on labor cost has backfired because of quality control difficulties, transport costs, working capital needs, intellectual property risks, and even eminent domain concerns. The dominant narrative does matter because management teams tend to follow the herd. Publicize examples of offshoring pitfalls and reshoring success. Changing the narrative will be an important part of changing the decisions.

A focus on likely candidates. Some products are more likely to be reshored successfully than others, and policy should be emphasizing these areas. Products with a higher likelihood of successful

reshoring include one or more of these characteristics: expensive shipping costs; high demand seasonality; significant needs for reliable, inexpensive energy; a low proportion of costs from direct labor; and a need for rapid product development or innovation.

Michael Porter of Harvard University has written extensively on what he calls "clustering." I believe one implication of his work is that historically strong regional clusters are still likely areas of opportunity. I know a small business entrepreneur who began manufacturing mugs in Ohio recently after importing them for two decades from China. I am drinking from one today. He is from California. His parents were immigrants from Germany mid-century, but he found the existing infrastructure from Ohio's prior strength as a ceramics manufacturing hub helpful, so strengthening and building on existing infrastructure will make the decision to reshore easier for companies.

Encourage expansion rather than exciting new facilities. As great as new facilities are, the reality is it is much easier for companies to expand existing facilities than to start things that are new.

I recently toured a plant in my home state of New Hampshire where a mid-sized manufacturer has expanded its capacity at a plant that had been in operation for decades, and there they did bring some components directly back from a plant in China that had been manufacturing them.

Do not forget the importance of innovation. The reshoring trend is due in part to hydraulic fracturing, automation, and other technological innovations. That is a strong differentiator for our economy, and the government plays a key role in basic science research. The private sector only emphasizes rapid commercialization at the expense of fundamental discoveries. Also, effective immigration for the highly skilled and educated is necessary if we are to make the most of some of our innovative potential.

With regard to employee development, access to a flexible skilled labor force has become a barrier to U.S. manufacturing. More formal job training support should be a key focus, again, building on pockets of existing expertise. And in some depressed regions, expanded social services may be needed to help the long-term unemployed adapt and reenter the workforce.

Incentives and tax reform are also important, particularly with regard to small companies because smaller, more domestically focused companies have higher effective tax rates than global corporations. According to The Economist, in the current tax system, the losers are smaller companies which have less room to maneuver.

Capital access will be addressed by some other speakers today, but it remains important, particularly for small companies as they try to expand capacity, and the regulatory burden for small companies is significant in the U.S. and is more important for the smaller companies than for larger. This is important to small business prospects because larger companies are better equipped to navigate complex regulatory environments and may encourage regulations that favor large companies. For example, according to The Economist, since lobbying is mostly confined to large established companies, the question is whether it discriminates against small, innovative groups.

To conclude, time does not roll backwards. For the U.S. manufacturing economy and its workforce, the world is much more competitive than it once was. It can be tempting to talk about jobs coming back, but that is not quite accurate. It is rather that incremental investment in American manufacturing may create new and different jobs. They may be higher skilled and higher paid than those that were lost, but there will probably be fewer of them. The broader benefit to U.S. employment, particularly low-skill employment, will come from associated services, such as trucking, distribution, retail, and banking. Efforts to recreate what once was are not the right focus.

Thank you again for the opportunity to offer my perspective on the reshoring of manufacturing to the U.S. as it relates to small business.

Chairman RICE. Very impressive.

Our next witness is Mr. Bobby Hitt. Mr. Hitt was appointed by Governor Nikki Haley to serve as secretary of the South Carolina Department of Commerce in January 2011. Mr. Hitt brings to his position a wealth of experience and knowledge in manufacturing. Prior to his current appointment, he served as director of Planning and Development for a firm that helped convince BMW to locate an auto assembly plant to South Carolina. As commerce secretary, Mr. Hitt continues to work to attract new manufacturing investment and business to South Carolina, including domestic and foreign firms looking to reshore or onshore their manufacturing. And I can tell you he is a big reason why South Carolina has had the success it has in competing for and attracting jobs.

Mr. Hitt, thank you for being here today. You may now deliver your testimony.

STATEMENT OF ROBERT HITT

Mr. HITT. Thank you very much, Mr. Chairman. I am delighted to be here with you and Ranking Member Chu, and Ms. Kuster from the Full Committee, and my colleagues here on the panel.

I thank you for the opportunity to provide testimony today on the subject of reshoring of manufacturing in the United States and its broader impacts within the business community. Many industry observers have been talking about a manufacturing resurgence, as my colleague here on the panel has, or renaissance, for quite some time. Research coming out of the Boston Consulting Group and other groups in the Northeast have confirmed this trend as you have heard this afternoon.

On a national level, between January 2011 and December 2013, the U.S. added 434,000 manufacturing jobs, a gain of 3.7 percent. This rebound follows a decade-long decline in manufacturing as we know at the national level where nearly 5.5 million manufacturing jobs were lost, a decline of 32 percent.

Well, I am happy to tell you, speaking on behalf of South Carolina's lead economic development agency, our state is at the forefront of the manufacturing revival today. South Carolina, while a small state in physical size, has had a traditionally-strong manufacturing presence. The sector continues to gain momentum.

South Carolina's manufacturing GDP was $28.7 billion in 2012. This is approximately 16.3 percent of the state's overall economy,

a larger share than that of the national economy where manufacturing accounts for 12 percent.

Between the end of the recession, as we recorded in July of 2009 and December 2013, South Carolina added 15,600 manufacturing jobs, an increase of 7.4 percent, more than double the rate of growth on the national scale over the same timeframe.

According to a report released by the U.S. Department of Commerce's Bureau of Economic Analysis, South Carolina is the fastest growing manufacturing economy in the southeast.

The report also ranked South Carolina's economy as the 12th fastest growing in the nation and tied with our northern namesake North Carolina as the fastest growing state on the East Coast.

We are known as a heavyweight in aerospace and automotive sectors, with the highest per capital employment by foreign-owned companies in the country. The highest. For these reasons, the National Trade Press has given us a new moniker. We are now referred to as the "Beast of the Southeast," and we are very proud of that.

Twenty years ago, it was a very different conversation. Manufacturing was picking up and moving out of the United States, and in South Carolina. Hardest hit in our state was the textile industry, which shed 60,000 textile mill jobs and 12,000 apparel jobs over a 10-year period from 1998 to 2008 just in South Carolina alone.

At the same time, however, the automotive sector was taking route in our state, anchored by German automaker BMW, where I spent 18 years of my career and where I developed a personal passion for manufacturing. Today, there are 45,000 South Carolinians employed by the automobile industry in South Carolina.

More recently, we have successfully recruited the aerospace industry to South Carolina, including Boeing 787 assembly operation, and our state has three of the top four global tire producers.

There are several factors driving this reshoring and onshoring of manufacturing today.

Logistics is a driving force as companies seek savings in transportation costs. Companies are moving back to the U.S. to get products to market faster and respond rapidly to customer orders in a "just in time" manufacturing environment.

Workforce considerations and a desire to have influence over the quality of the finished products are important, as are lower energy costs and competitive costs for land.

Recent announcements reinforce that onshoring is occurring in South Carolina. In 2013 alone, nearly $1 billion in capital investment and 1,200 new jobs were announced by manufacturers bringing their operations to South Carolina from overseas. The companies range in size and scope.

Some recent examples, Silcotech, which is a maker of silicon-based injection molding for the medical industry based in Canada selected York County for its U.S. plant. The company is investing $3.5 million, creating about 50 jobs.

Last year, three Walmart suppliers announced new facilities in South Carolina as part of Walmart's U.S. manufacturing initiative. Collectively, these three companies represent 800 new jobs and about $14 million in investment.

Importantly, these announcements are occurring in our state's rural areas. In the past three years, under the leadership of Governor Haley, more than 30 percent of the projects we recruited to the state have announced in South Carolina nearly a quarter of the jobs created have gone into the state's rural counties.

The Walmart suppliers locating in our state include Kent International, a bicycle manufacturer. Bicycles have not been manufactured in the United States for a long, long time. The second is Element Electronics, a maker of TV sets, another product that has not been made in the United States in a long time. And yet another one, Louis Hornick, which will produce window coverings and home textiles, something that was a tradition in our state in the past. Yes, textiles are returning as well to the U.S.

Another prominent example for South Carolina, as well as cemented in North Carolina, is the Keer Group, a Chinese textile company which decided to build its first plant outside of China in Lancaster County, South Carolina, where they will produce industrial yarn. The company's $218 million investment is expected to create over 500 jobs.

Of course, when speaking about manufacturing, by and large, these are larger operations employing hundreds, if not thousands of works who assemble products ranging from cars to planes to tires.

The reason is that manufacturing facilities are becoming much more capital-intensive. The average amount of capital investment by companies per manufacturing job created in South Carolina has more than doubled in just four years' time. In 2013, this figure was $424,000 of capital per job versus $176,000 in 2009, thus, the rapid increase in the ratio between capital and labor. This points to the fact that overall most manufacturing requires a large amount of capital and is difficult to grow to a meaningful scale for traditional small businesses.

Where the small business community typically reaps benefits from manufacturing in our state is either by providing a value-added service in direct support of manufacturing operations (such as machining or repair) or providing other services such as janitorial, staffing, subcontracting on construction projects.

For South Carolina, the jobs multiplier for automotive manufacturing, for instance, is approximately four. There are also examples in our state of manufacturing contract work that has been onshored to manufacturing operations of fewer than 100 employees. This includes companies like Sargent Metal, which contracts with Otis Elevator and ADEX Machining, which provides value-added work for the aerospace sector.

The Department of Commerce's mission is to recruit businesses to the state and to help existing business grow. Commerce has positioned itself as the state's business agency no matter the size of that business, an area we have strived to augment over the past three years as our small business area, which offers resources and programs specifically aimed at the small business community.

These programs, including export assistance, which has been the beneficiary of federal funds from the STEP program (State Trade and Export Promotion). From 2011 through 2013, our staff helped

59 small and medium-sized enterprises enter export markets resulting in almost $4 million in new sales.

Additionally, we have hosted a series of events, pairing small business owners with prospective lenders—something akin to "speed dating" as we call it for acquiring a business loan.

The Department of Commerce works to connect the dots between small business and large industry.

One recent success is Continental Tire, which is investing a total of $500 million and creating 1,600 jobs in Sumter, South Carolina. The tire maker announced in January it has awarded some $100 million in contracts to South Carolina companies to date, an example of the ripple effect that occurs when a company of its scale locates in our state.

There is more and more detail; I could go on and on.

In closing, South Carolina is benefitting in a large way from the manufacturing investment, and I believe there will continue to be opportunities for our small business community to profit from the manufacturing renaissance. The adage, a rising tide floats all boats, certainly fits, and I thank the leadership and the Committee for allowing me to testify today.

Chairman RICE. Thank you, Mr. Secretary.

Our next witness is Kevin Harberts. Mr. Harberts serves as president and CEO of Kryton Engineered Materials, a small manufacturer of spun and fabricated medical components located in Cedar Falls, Iowa. As a supplier to other assemblers and original equipment manufacturers, Mr. Harberts has seen firsthand the benefits of manufacturing reshoring for his business and community.

Mr. Harberts, thank you for appearing today. You may now deliver your testimony.

STATEMENT OF KEVIN HARBERTS

Mr. HARBERTS. Good afternoon. My name is Kevin Harberts, president and CEO of Kryton Engineered Metals in Cedar Falls, Iowa.

Founded in 1981, Kryton Metals is an industry leader in manufacturing spun and fabricated metal parts. We service a range of industries, including foundries, ventilation, lighting, aerospace, and some automotive. Many of our products contribute to enhancing the nation's energy efficiency, and some are installed in LEED-Certified buildings across the country.

Last year, we had 63 employees; today, we have grown to 71 and hope to hire another 8 to 10 this year. We attribute this growth directly to reshoring—a product line which left the U.S. a decade ago and came back to America's heartland. But to understand our growth, you first have to understand how we got there.

Like many others, the Great Recession hit us hard in 2008 and 2009. We had to let go 35 employees. For any family-owned business, this is one of the most difficult things that you can go through, but it was necessary for us to survive.

Then, about two years ago, a company sourcing from Europe was exploring whether they could return the manufacturing to the U.S. to serve the North American market. Location was important, but the real test was price. In our industry, a price differential of a

fraction of one penny can mean the difference between getting the job and missing out.

We were not in a position to hire more employees to meet the demand, so like all manufacturers, we had to learn how to do more with less. The company did invest in increased automation to meet their target prices.

Our customers slowly began transferring the work to our shop in Iowa, and now we are looking at a $5–6 million product line. For a $10 million a year company, this changed the fate of our business and the lives of our employees.

Prior to reshoring its business from overseas, the customer had to wait two months to receive the product. After reshoring, its delivery time went from two months to two weeks. They can now develop new products for it in a matter of weeks rather than wait for a ship to cross the Atlantic.

The decision of our customer to supply from Kryton Metals will carry us into 2020. We are going to save our customer money, grow our business, and most importantly, create jobs in Iowa and throughout our entire U.S. supply chain.

These kinds of opportunities just do not happen often in our industry. In convincing the customer to bring the work back to the U.S., we not only created jobs at Kryton, but we created jobs for our suppliers and vendors as well. For example, my raw material purchases have increased fourfold due to this reshore business. This is an important point about the manufacturing industry. Not only do we directly employ 12 million Americans, but our industry indirectly supports a combined 18 million jobs.

While we are currently growing, we struggle to find qualified employees to fill our job openings. Kryton Metals hopes to hire another 8 to 12 more Iowans this year, a significant expansion for a small business. These are not minimum wage paying jobs. For some of my openings, the starting salary is $70,000–$80,000 a year plus benefits.

In addition, the uncertainty in Washington is not helping. While politicians argue among themselves, employers like me are stuck in a holding pattern. We do not know whether Congress will extend the R&D tax credit, we are unsure what new rules OSHA and EPA will impose on us, and we cannot find qualified workers in large part because Congress has not updated our jobs training law in over a decade.

Kryton Metals future looks pretty sunny at the moment, but manufacturing's future is incredibly cloudy. Although the economy is improving, it is not doing so at the rate we need. To improve manufacturing's forecast, we must look to overseas opportunities and convince foreign customers that the U.S. is the best place for manufacturing. We are doing our part to encourage reshoring; now it is Washington's turn.

Thank you for allowing me to testify today and to highlight the great story that is manufacturing in America.

Chairman RICE. Thank you very much, Mr. Harberts.

Mrs. Chu, if you would like to introduce our next witness.

Ms. CHU. It is my pleasure to introduce Ms. Mei Xu. She is the CEO and cofounder of Chesapeake Bay Candle. This company produces high-end scented candles and is one of the most popular can-

dle brands around the world and is sold in major U.S. retailers, such as Target, Kohl's, and T.J.Maxx. She is a small business that has over 100 employees in the U.S. She was manufacturing abroad, but when the decision came to set up a new plant, she decided to locate it in the U.S. She recently spoke at a roundtable at the White House on insourcing American jobs, and she talked about the factors in her decision and what America needed to do to encourage this. She is a very successful entrepreneur and an outstanding spokesperson.

Ms. Xu.

STATEMENT OF MEI XU

Ms. XU. Thank you for inviting me, Chairman Rice and Congresswoman Chu, and distinguished members.

Our company, Pacific Trade International, is one of the leading home fragrance suppliers in the U.S., with brands like Chesapeake Bay Candle, BlissLiving Home, and Alassis. We generate over $60 million in revenue each year and employ about 130 people in Maryland. We supply home fragrance products, from candles, diffusers, and other accessories, to major retailers such as Target, Kohl's, and now also Bloomingdale's.

Since 1994, our products have been produced and sourced mainly from China and then Vietnam. We hold an ownership stake in both of these facilities and depend on a reliable, high equality supply chain. In the middle of the financial crisis, like my partners have just spoken, we have seen a rapid increase in the cost of labor, freight, and materials in Asia, while demand has increased from our retail partners for faster replenishment cycles as well as their need for lean inventory. The pressure on costs and inventory led our company to become one of the earliest proponents of the insourcing trend.

The following reasons pushed us to make the U.S. our final destination for manufacturing operations, rather than considering traditionally less expensive candle destinations, such as Mexico and Poland.

The number one reason is speed to market. Our U.S. factory can deliver replenishment orders within one week versus four to five weeks from Asia. This makes our factory attractive for retailers, particularly on seasonal-sensitive products, such as your Pumpkin Spice and your Christmas Tree Scent.

The second reason is the cost of shipping and logistics, as Mrs. Chu has mentioned. In the middle of the financial crisis, when everything else has been in confusion, the biggest thing that is for sure is the rising cost of transportation due to oil price increase. This decision helped us avoid transnational shipping and rely only on domestic shipping, and it cut unpredictable cost variations due to oil prices and the constant demand and supply changes that impact oceanliner prices.

The last reason is production cost. Automation made it possible for manufacturing in the U.S. to be comparable to that of Asia.

Once we made the decision, we quickly decided to look at Maryland as our destination because we wanted to make the link Chesapeake Bay Candle to the manufacturing facility. We looked at miles and miles of unoccupied warehouses along the 695 corridor. Many

of you might have visited. It is heartbreaking to see that so much manufacturing has left Maryland, and one out of every four blue collar workers in the county of Baltimore are unemployed. We decided to build our factory there, taking advantage of the abundant warehouse space as well as give back to the community that has given us the brand and its reputation.

Built without government incentives or support from local agencies, PTI's new factory in Glen Burnie, Maryland, was budgeted to cost approximately $4M in capital investments, working capital for start-up, and inventory.

We were unable to identify any source of available government financing that did not require a lengthy application and approval process. The Maryland Economic Development Council offered the possibility of low interest rate financing, but the review process proved to be too lengthy and the funding limits too restrictive to meet our needs. In the absence of viable funding options, the company proceeded with the project on its cash reserve and our own savings.

The time to completion for initial lease execution was planned to be approximately six to eight months with completion planned for Q4 of 2010. In reality, Maryland has not seen manufacturing in the last 20 years. It was very confusing to even ask where do we look for guidance for meeting the code that is required to open a facility. We were directed to one clerk in the County of Anne Arundel and he threw three big books the size of your Yellow Page telephone numbers. One was for hospitals, one was for nursery schools, and one was for restaurants, and he made us read all of them in order to meet the codes that maybe will meet the requirement.

Such delays and confusions end up costing us five months and $2 million extra to finish the project. We managed to open the business. There is a timeline here that really gives you a clear definition of where the delay comes from but I would eliminate all these details. Since opening in 2011, the Chesapeake Bay Candle factory has now grown from 17 employees to over 80, and projecting to over 100 by the end of the year, and tripled production capacity. It is now one of the leading new job creators in Anne Arundel County, and I heard there is going to be a job opening for the big casinos, so we are very concerned about that competition.

The company faces challenges in finding quality employees. Most applicants lack sufficient skills or training. Basic reading, writing, and arithmetic skills are often not available and many are unable to follow instructions or function in a modern, collaborative production environment.

To combat a 50 percent turnover rate in these jobs, additional incentives are being considered by our company. The local area has also suffered from a lack of qualified mid-level supervisory talent and engineers reflecting——

Chairman RICE. Ms. Xu, I am sorry. We have got to go vote. We have got 2:59 to get over there. We are going to stop the hearing, just recess it. We will be back in about 30 minutes. Okay?

Ms. XU. Okay.

Chairman RICE. So 30 to 40 minutes, and I will adjourn for recess right now. We will be back shortly.

[Recess]

Chairman RICE. The hearing is resumed, called to order.

Ms. Xu, if you would like to continue with your opening statement.

Ms. XU. As I concluded, as we are growing, the local area in Anne Arundel County also suffers from a lack of qualified mid-level supervisory talent and engineers, reflecting the absence of relevant vocational training and a vanishing ecosystem of other manufacturing companies.

Here are some of our recommendations to the Committee to help create more manufacturing jobs.

One, create regional advisory offices within the U.S. Department of Commerce or as an extension of the Small Business Administration to help small and mid-sized businesses navigate state, local, and other regulatory requirements. Many investors may not know how to determine which state best fulfills their manufacturing and business needs, and a federal level review of each state will help speed up the selection process.

Two, through the same mechanism, guide companies to relevant incentives for tax breaks, financing, training, and other programs, whether sponsored by local, state, or federal entities.

Three, provide a resource guide specific to new manufacturing ventures to help identify local suppliers, private developers, and other assets critical to startups. And I also would like to recommend a state-level, one-stop concierge service to help new investors understand compliance issues and the procedures related to a building manufacturing facility so that they can make more informed decisions.

Five, encourage local high schools and vocational colleges to provide gateway programs to internships and apprenticeships for local manufacturers to draw upon us as a resource for qualified talent.

To close, I would like the Committee to think about helping small business owners in particular in financing and tax breaks since all capital investment has become increasingly challenging because of the size and difficulty for banks to give loans.

I want to once again thank the Committee for allowing us to share the journey of our determination and our challenges. I hope that we would help educate Americans that we should be a nation that not only consumes and purchases goods, but also manufactures them and hope that we would cultivate an appreciation for manufacturing and for "Made in USA."

Thank you very much.

Chairman RICE. Thank you, Ms. Xu. Very impressive.

I now yield to the ranking member for her questions.

Ms. CHU. Thank you, Mr. Chair.

I will start with Ms. Xu. In your testimony, you listed several reasons that led you to decide on the U.S. as the location for your new manufacturing facility. As one of the business leaders pioneering the reshoring of jobs to the U.S., how do you think the federal government can best reach out and help other businesses who might want to consider the U.S. as their manufacturing destination?

Ms. XU. I think one of the main challenges has been echoed by Ms. Mills, is the complexity of different state requirements, coding, and regulations. For federal government, mainly I think from the

Commerce Department of affiliations. Maybe we can start looking at a one stop shop to inform everyone in this particular area where to find the answers and also to work with SBA for facilitating the necessary funding that manufacturing investment needs.

Ms. CHU. I know that your business will probably continue to grow. What would be the most important factor affecting your decision to continue manufacturing in the U.S. and perhaps even expand operations here?

Ms. XU. We definitely are determined to grow as our demands, our orders, actually every month is exceeding our capacity. The biggest challenge is now people. We do not have a very good answer on how to have a program that can help us to find people that is for high school or even some college degree because the mentality of working on a factory floor is a very different one than what we can find.

I heard in Michigan, when I was joining the White House forum, that they set up training workshops close to big manufacturing facilities. For four to six weeks, they have high school kids that go to those programs and learn the ABCs of what a manufacturing company work environment is so they mentally are trained to enter the workforce. And I would hope that states and the government can think about such programs.

Ms. CHU. Okay, thank you.

I would like to ask this to the entire panel and that is there are many small manufacturers with growth potential that may not seek assistance with operations, marketing, and finance because they are simply unaware that it is available. However, the SBA has many entrepreneurial development programs, including the Small Business Development Centers and the Women's Business Centers. What could we do to increase the awareness amongst the entrepreneurs of the SBA's business counseling services?

Mr. HITT. I will go first. I agree with you, Congresswoman. When we came in we saw a number of agencies trying to provide the same services but doing it in a way that people could not find them. We brought all of those together. I brought a team in. We built the website that we have so that someone can go in and put in the name of the county they are in, they can put in the type of business, the size of it in terms of its capital and its program, and it is sort of a decision tree that starts bringing you down to the programs that are applicable. It is hard to look at the array of programs out there for an average person and try to sort out what is applicable to them. So we in government, at the state level and federal level, ought to do those things together in order to make it easier for them. I have this belief that there are people at home at night at 8 o'clock on the web trying to find a way to expand their business and find capital and looking for people like them that they can interact with, especially with entrepreneurs. We need to do more of a job of being an enabler to help them find those programs.

Mr. HARBERTS. I would just actually reiterate what he is saying as well. We took advantage of SBA. Seventy years ago was probably our last time that we used them, but the complexity that we ran into in the rules and regulations, we got bogged down in that and we just did not have anybody to help us. So we have not

used them since. But I think if they can streamline that a little more than it is already, make it easier, it would be a win-win.

Ms. XU. I am thinking that because most of the SBA programs to sponsor or guarantee a commercial bank to offer loans. So working with commercial banks and letting commercial banks be the ambassador for those programs because a lot of the small businesses deposit with banks, so making them be the advocate of those programs and the informers of those programs held special events for SBA to come to local branches where small businesses tend to gather is a great grassroots level awareness to raise.

Ms. MILLS. I agree with all of those. I would also highlight that you could use word of mouth. There are organizations that particularly small business entrepreneurs do not have peers that they can frequently speak with about these things, and so oftentimes they join organizations like YPO and some others. And if that can help spread the word, then that would be a way that they could learn.

The other thing is just I do some additional work with financial literacy and financial capability, and one of the things that shows up repeatedly there is that people do not absorb things until the moment at which they need the information. And so finding ways to insert that relevant information into the decision point when it becomes relevant—for example, potentially with the commercial banks—would be, I think, the best way to do it because although people do sit at home at 8 o'clock every night, I think you are completely right. They probably do not necessarily notice what they might need a month from then when it comes to that decision point. So both of those things. I think that the decision tree is brilliant and the website is a great idea, but I would also try to insert it when the decision is being made and when the regulations are being dealt with.

Ms. CHU. Yeah. Very good point.

Ms. Mills, you mentioned in your testimony that access to capital continues to be a challenge to small businesses trying to expand. This is one of the most critical issues particularly for this Committee. Can you expand on specific policy recommendations this Committee could take up to expand access to capital to small businesses, especially those in manufacturing?

Ms. MILLS. Yes. I think this is a complex area because typically it is not the best idea for the capital to be coming from the government. You are trying to incentivize banks and commercial lenders to be willing to loan to a circumstances that to them I think seems quite risky. So ways to mitigate that risk, I am not sure exactly what those would be, but receivables, financing, things like that might be helpful.

I think the others on the panel might have some additional thoughts.

Mr. HITT. Well, we are starting to see different kind of equity organizations be created, including business development, corporations, and the like. For reasons, and I have no banking experience so I cannot really speak to it, but what we constantly are being told is that the old way, when I was young, where you would borrow and grow, is no longer really a viable way in the current banking system. You cannot go in and borrow money to grow. You can only

borrow money if you have the assets and do not need them, so to speak.

But we have crowdfunding bills coming up. We have got a whole variety of things coming in, which is an indication to me that the system that we once had has become impenetrable, and therefore, typical of the American way, there are many different answers being created. Whether they will solve the problem or do it fast enough or with the speed that we want is another matter altogether. But there are a lot of different avenues out there.

And when we talk about the government, I mentioned in my testimony what we call "speed dating." And what we do is we do these in different towns and communities around the state, and we bring all the lenders into a big room and we invite all of the small business contacts we have had into the room and lock the doors and make them get a loan. It works. Actually, we make it a little more fun than I am making it sound.

Ms. CHU. Well, let me ask Mr. Harberts a question about you talked about having trouble finding qualified workers for low and mid-level positions. And in his budget, President Obama recently proposed over $7.7 billion in new funding for apprenticeship programs and job training to help eliminate the skills gap. Do you think this would be helpful in closing that skills gap and perhaps in getting our 10.5 million unemployed citizens and the underemployed back to work?

Mr. HARBERTS. Absolutely. I think that will help. I have been looking for a robotics engineer for almost two years, and in our area, John Deere has a huge presence and Rockwell Collins. And as a small employer, those guys get everybody that comes out of the community colleges. They are only graduating about 20 to 25 kids a semester and most of those kids are spoken for in their first six months of their apprenticeship. And I do not have a chance to get any of these guys. But I do think that will help. Definitely will help. But it is a challenge for a small entrepreneur versus a big corporation in attracting these kids.

I go into the high schools and junior highs myself and I speak to these kids to try to get them interested in manufacturing because a lot of times kids equate manufacturing to what it was back in the '40s. It is not. It is not a dark, dungy old oily factory. It is high tech. And whatever we can do to encourage that thought is good. So I do a lot of that. But I think what President Obama has done is definitely going to go a long way to helping.

Ms. CHU. And Ms. Xu, I have a feeling you have an opinion about this.

Ms. XU. Well, it goes back to letting us have some pride in making things again because not everyone is cut to be Bill Gates. Let us say there are still those of us who are creative and who enjoy making the most delicious cookies or beautiful candles.

And there should be another thing about "Made in USA". As a lot of Asian countries are different in terms of the trust of their manufacturers and in processing food and in other products, consumer products. We have a great chance to export. "Made in USA" stands for authenticity and a great consistency and quality, so there is a huge demand now. If you look at a lot of malls, you can see a lot of foreign people with luggage. They are buying up

things—our chocolate, our coffees—because they think there is nothing they should worry about in quality. So I hope that the program really goes down to the level of training high school kids, not people already having a lot of job offers because that is a real gap that is existing.

Ms. CHU. Okay. Thank you. I yield back.

Ms. MILLS. May I share a few thoughts on that?

Ms. CHU. Oh, of course.

Ms. MILLS. If you do not mind.

So three thoughts. The first is the people I speak with run a lot into absenteeism in addition to issues with skills, and it is not always as simple as just providing the skills. Sometimes there are cultural dynamics at work as well and incentives may be necessary in order to get people to understand that the regularity of the structure of working in a job like this is different than what they might be used to. And the other thing is I think what I heard in some of the comments I would like to tie back to something I mentioned which is the importance of the story of success here because when you put lenders in a room with manufacturing companies and you tell them you need to lend to these companies to grow, if they still believe in the decline of American manufacturing it is a very different conversation than if they understand that things are really changing. And that also matters a lot in terms of encouraging people to go into the types of programs that will create those robotics employees. So it is a soft thing but some of the things that can be done are just creating these success stories and making them more public so that people have a different frame of mind, but the apprenticeships are an important part of it. But on-the-job training typically is more successful than structured programs.

Ms. CHU. Thank you. And I yield back.

Chairman RICE. Thank you, Mrs. Chu.

Mr. Harberts, I am going to start with you because you said something I was interested in. You were talking about the lack of skilled labor, and it is fascinating to me to see the high rate of unemployment of people coming out of typical four-year colleges who have majored in areas that may not be as employable, and yet in our area, for example, we have a technical school called Florence-Darlington Tech, and they have a very advanced CDM program (computerized digital machining). I was talking to the guy. In fact, he came and testified here six months ago. And they can take, I believe it is 80 students a year. It is a two-year program. And first of all, they cannot find enough people to sign up for it. And the worst problem they have is they cannot get people to graduate. Do you know why they do not graduate? They get the jobs before they graduate. Because after the first year they are hired away at high salaries and they cannot get them to finish the program.

So we absolutely have a mismatch. And the really bothersome thing about that is that some of the neighboring counties to this area have some of the highest unemployment in the state. In Marion County, South Carolina, we have 15 percent unemployment, and yet they cannot find enough students to sign up for this program with 100 percent placement rate. So it truly is, there is a big mismatch, and how we fill that, that is an interesting problem.

Ms. Xu, you were talking about—do you export now or were you talking about the prospect of exporting?

Ms. XU. We are very happy to say we are exporting from day one. Of course, to our neighbor Canada, Australia. Now we are also going to be in China.

Chairman RICE. What port do you use, or do you know?

Ms. XU. Port Baltimore and California.

Chairman RICE. You know, one thing that serving on this Committee and on the Transportation and Infrastructure Committee and learning about the need to have ports that can accept these Panama Canal ships, post-Panamax ships.

Ms. XU. It would speed things up.

Chairman RICE. Well, it drops the cost of shipping. So it will cost instead of $3,000 a container, it will cost $2,500 a container. So if you are sending a container of candles to Australia and you can do it $500 cheaper if you can take a post-Panama Canal ship.

Ms. XU. And to Mexico.

Chairman RICE. Or if you do not have access to that ship and the guy up the road does, who is going to have a competitive advantage? So we need to make sure that our ports can accept these things. And the problem is the federal regulatory requirements are so strict on digging out of port.

Mr. Hitt, do you know how long Charleston has been working on getting their port dug out?

Mr. HITT. Yes, sir. It has been a long time.

Chairman RICE. It has been years and years, has it not?

Mr. HITT. Yes, sir. I believe the study is going to start this year, however.

Chairman RICE. Port Everglades has taken 15 years to get approval. Fifteen years.

Mr. HITT. Congressman, as you remember, we funded it from state level because we could not wait any longer.

Chairman RICE. Yes, sir. And I worked hard on getting that language in there for you on the water bill.

Mr. HITT. Yes, sir. You did.

Chairman RICE. But, no. It is a huge problem. Everybody up here has talked about the federal regulatory web and how it stifles business growth and competition.

I come from a background of local government. I was chairman of a county council and we decided we were going to get in the economic development business and it worked. And we decided to compete. Charleston County competes with Savannah County and counties in Georgia and counties in North Carolina and counties in Tennessee. The state of South Carolina is doing a pretty effective job of competing for jobs. Not necessarily taking jobs from other states, but where is that business coming into this country going to locate? And this man right here has been responsible for a lot of that competition, a lot of that success in competition.

Mr. Hitt, what I want to know from you is, and I also want to know this from you, Ms. Mills, do you think the United States is doing an effective job of trying to compete for jobs? Do you think we have an attitude like a lot of our states have and like a lot of our local governments have of let us go and figure out why we are not competing and let us compete? I want to know if you think we

are doing it, and if you do think we are doing it, what entity in the United States government do you think is doing that?

Mr. Hitt?

Mr. HITT. We are not competing as effectively as we could. We are successful in much of our international efforts because we have such a strong consumer market and companies want to come here because they want to learn and be able to increase their penetration of this market. My company, BMW, was one of those 20 years ago. I think we lack competition because we do not have a sense of certainty in terms of our budgets. We do not have a sense of certainty in terms of the tax programs that we have in the United States. One of the things that we do when we are attracting companies to South Carolina is we sit down and lay out to them 30 years' worth of tax issues for South Carolina and how they are going to be managed. We tell them this is it and then we stay with them.

So predictability is such an important thing in business. Companies, especially companies from around the world that might have to deal in multiple currency and capital and treasury systems, they need to be able to predict. As you know, as a county councilman, the predictability of local taxes which we have a mechanism for in South Carolina, we can even equalize them over a long period of time, even with increases in investment a lot time and relevel them. That was more important to my old company at BMW than the rate, was the ability to predict what was going to happen next so they could compete on a worldwide stage.

Companies like that come to South Carolina. We have become the number one exporter of tires, the number one exporter of cars, and the reason is because it is cost effective to build material there and sell it around the world. That is because it is predictable. And if the U.S. was more predictable it would be good.

Also, I would mention on the issue of engineers and such, if I walk into an engineering classroom at Clemson University, which is our major engineering school, half the students in that class will leave this country when they graduate because they are not native to our country. And as a result, we have a great drain the way we train and then do not have the opportunity to use those folks. That is a difficult thing.

I was with an international company, and the ability to move people around and to manage that brain trust and be able to learn from each other across different cultures and expand our productivity and the like is lost because we simply do not have the swiftness with which to do that anymore.

Ms. MILLS. I would say the answer to your question is no. I do not see that happening in the way that you implied might be helpful. And I agree that it would. And I would highlight that when I meet with management teams what I hear frequently is that other countries have a much more cohesive strategy and offer them things that seem much more transparent and much more clear. Over time, they often learn that what they believe from other countries would be transparent, clear, and straightforward is not. And part of what is happening with things beginning to come back is people are realizing that what they believed was certainty abroad was not certainty after all and that, in fact, there is more equality

in that dynamic between the United States and other countries than they had thought when they initially moved things abroad.

So I agree that the inconsistency is a problem and the constant change is a problem and that there is a lack of strategy and a lack of focus in trying to communicate to people the things that are worthwhile and the things that are good. But I actually think on the margin it is getting better and if it begins to be encouraged that it could be quite important.

But, for example, something that I am hearing about a lot right now is this question about export of crude oil. And if you are trying to decide whether to build a refinery or whether to build a chemical plant, whether to add a lot of new tank cars so that you can move crude around the country, that has an absolutely massive impact on your investment decision and there is very, very little uncertainty around it because the discussion changes from day to day. And that delays investment and growth that would be happening right now likely if that were not the case.

Chairman RICE. Something that really comes to my mind is something I have been working on and something that is really bothersome to me as my history as a tax lawyer and CPA. The Affordable Care Act is a pretty big factor to companies, particularly those that employ over 50 people. And when we have these things, these aspects of it changed every month, does that affect companies' decisions? Does that uncertainty that it creates affect hiring decisions and so on and so forth?

Ms. MILLS. It is part of the conversation. So what I have been hearing from people recently is, for example, frustration about the fact that they are not certain they can get people the quality of care they need if they need to shift them, and I do not see it affecting investment decisions as much as I see it part of the overall culture of confusion and lack of clarity. I think that from a tax perspective, something that is much more significant is the complexity of managing the tax code and the fact that that gives such an advantage to larger companies, particularly companies with operations abroad that can appropriately or otherwise—not passing judgment there—can use transfer pricing to make certain that their profits are not in a higher tax location. So I would point to tax simplification as something that I think is much more significant.

Chairman RICE. What about tax rate?

Ms. MILLS. Less important.

Chairman RICE. Less important. Even if we have the highest rate in the world?

Ms. MILLS. We have the highest rate in the world only on a statutory basis, not on an actual paid basis. And when you actually adjust for a lot of things in other countries that are taxed in different ways—for example, higher payroll taxes, other things—I believe, based on the research I have done, that our tax rate compared to many other places is not really that out of line. Now, if companies can shift to Ireland and pay zero percent tax rate, which is what is now being done by some pharmaceutical companies——

Chairman RICE. Canada?

Ms. MILLS. Not as big a difference, but I am not as informed on that. The overall global tax structure that exists right now is

about to send things I think into an unpredictable environment because of what is happening with being able to pull companies to locations that have extremely low tax rates.

Chairman RICE. Mr. Hitt, what do you think about that?

Mr. HITT. I think the air of confusion that Ms. Mills is talking about, whether it be with healthcare, with tax structures, or what have you, it creates a perception of not great stability. Companies look for stable environments in which to be able to predict outcomes. They have a lot of variables. Any manufacturer is faced with new variables every day. They are trying to have predictability. So I hear from companies. They talk about healthcare; they talk about the confusion. They talk about taxes; they talk about the confusion. They talk about the differential should one of their suppliers be in Mexico because Mexico has a tariff advantage. If we are going to export from the United States, our advantage is less than Mexico's advantage. The view is that no one is paying attention to our advantages.

Chairman RICE. Ms. Mills, you mentioned Michael Porter, and I am a Michael Porter disciple. And he has written a menu of things. He is a specialist in national competitiveness. And his menu includes sustainable federal budget, high-skilled immigration reform, corporate tax reform, international tax system rather than taxing global earnings, Internet trade, reform of the trade system, streamlined regulation, which I think everybody up there, every one of you guys mentioned regulation is a problem, infrastructure improvement, and reasonable, responsible development of shale and oil gas reserves. So in my opinion, if we get the cost down here, maybe we do not have the lowest wages in the world, but maybe some of these other costs being lower can help. I do not want to compete for low wage jobs. I mean, I do not want to compete for minimum wage jobs. I want good, high-paying jobs.

Ms. MILLS. I think one of the things we are all saying is that good, high-paying jobs also create more minimum wage jobs.

Mr. HITT. Correct.

Chairman RICE. Right.

Ms. MILLS. And that those are an important thing to have as well.

Chairman RICE. So if you look at this list, how do you think—I am going to go to you, Mr. Hitt, because you are doing it in South Carolina right now. How do we start working towards these things at a national level? It seems to me that we need somebody focused on this, on competing. Do you have any suggestions for us? How do you do it in South Carolina? How do you pull all these entities together and say we need to do these things to compete?

Mr. HITT. Of course, in most of the states we have balanced budgets. We have predictability on many of these things. We are much smaller. We have the ability to pull together the regulatory structures. We house the Small Business Regulatory Commission inside our agency where we go in and we start striking through the things that are a problem, bring them up and bring them to the legislature or the appropriate agency. There needs to be some kind of clearinghouse.

Porter's position is, I think, pretty similar to what you are hearing from this panel, and that is we need stability, predictability. In

order to do that, someone has to be watching. Someone has to be measuring. I mean, in the manufacturing world where Mr. Harberts comes from and I come from, you measure everything. And we need to measure what is having an ill effect on our competitiveness. We can be more competitive as a country. I will tell you, we do not seem to have the attitude to be as competitive to the rest of the world as parts of the rest of the world have to be competitive with us, which is why we hear about Brazil and why we hear about what is going on in China and Indonesia and India and other places. And when we go and look at the secrets there, what you find very quickly is you have predictability in those markets that had been created by having—whether it is through a commerce function or other function, the one-stop Ms. Xu asked about where someone can come and find out how do I do business here? Almost half of our new investment in South Carolina each year is foreign. We are talking with people from all over the world. They want to know how do you do it here. I have had them ask me, "Can you tell me what is going on in your federal government?" I have literally had them ask me that. And I will tell them, "Well, we will take care of you here in this state." Because there is such a perception that there is not stable, predictable environment. So it is heard, whether it is healthcare, whether it is regulatory issues, not funding infrastructure and the like, all of these things.

I had a very wealthy couple that I met with and had breakfast with this morning that employ 80,000 people worldwide and are looking to make their first manufacturing investment in the United States, and they asked me what kind of investments were we making for the future in South Carolina. And I was happy to be able to tell them we were investing about $2 billion in our port and logistics system, railway system that is under our operation in the Commerce Department, because we are preparing to be even better and faster at logistics for our manufacturers in the future. So companies are asking us what we are doing to enable and prepare them to be competitive in the future. I think the states that do the best job at that will win. I hope mine is one of them.

Chairman RICE. Well, see, you just heard that attitude of competitiveness right there. Did you hear that?

Ms. MILLS. I would like to hear more of it.

Chairman RICE. My question to you is can you give me any suggestions on how we create that attitude of competitiveness at the national level? Any suggestion? I know that is an oddball question that you did not see coming.

Ms. MILLS. So you talked about measuring. Manufacturers measure things. We are all sitting here talking about whether this is happening. Right? We are pointing. We are like a blind person trying to describe an elephant by touch. We are saying this is happening in South Carolina. This was announced in this place. If we had a better reporting structure where we could say this is what we have gained that we had been losing—I think one of the things that is not emphasized enough in all of this discussion is we were losing. We were bleeding. We are stabilized and we are improving. To an equity investor that is huge. That is not the way most of the world things but that is an absolutely wonderful, massive, fantastic

change. Talking about that, publicizing it, creating a website, having a place where everything gets listed. Where when someone starts to talk about an improvement in manufacturing in the United States you say, yeah, you know, go to "itisactuallyhappening.gov" and start to show things. And then start to have that also create mentors so that when people have an opportunity and they are trying to figure out how to navigate it they can maybe find the examples of where it has been done.

I do think South Carolina has done this incredibly well, and it does come down to the attitude and the organization. It is, I think, going to be much more difficult at a federal level because the states do also play such a big role. So things are not apples to apples in every different place and it is not going to be that simple. But I hesitate to say create an office or come up with a person or any of those things. I just think that lots of little efforts in a lot of different places can all start to add up.

Chairman RICE. In my opinion, there is nothing more important than this. This is our way out of the malaise. This is our way out of our unemployment problems. This is our way out of our entitlement problems. This is our way out of a lot of crime problems. This is our way out of many of the biggest issues that face us right now. And I wish I knew how to create that attitude of competitiveness that you have, Mr. Secretary, at the national level. And any suggestions you all can give, I sure want to hear.

Mr. HITT. Well, again, I earnestly believe that greater predictability is what drives manufacturing. What this man is saying is if I can control this, this, these things around me, I can make a profit. And if I can make a profit, I can sell more, whether it is candles or machined parts for a variety of industries. Everyone who makes something wants to make more. They want to have more people working and they want to have more production. There is a strong competitive spirit in this country. We are seeing it going on right now at the innovation levels. I think with what we are seeing with high-tech business creation down the lower level. I see young people that say they do not want to wear a coat and tie and go to work like the rest of us. They want to do something different, and you are seeing this whole code world grow up now with the applications and the like. I believe there is a lot of activity. Government has not figured out how to enable it.

I was recently given some money by the legislature to try to go and see how we could help foster this. I put out a program. I got 37 applications within six weeks from programs that want to work in the area of innovation. Innovation is something that is classically American. It is what we do that gives us the competitive edge and the productivity edge, but right now we are all sort of just watching it. We are not necessarily feeding it. And I do not know the exact way to feed it, Congressman. What I know is we right now have so many unpredictable pieces that what I hear from people is they do not want to take the risk. Again, the group I met with this morning for breakfast before I flew here making their first effort, it is a very scary thing to come from another part of the world and set up huge capital investment into hundreds of millions of dollars, and they are looking for predictability. We have done quite a few in the last few years and they are starting to trust

us, but I think it goes back to we need to communicate more and people see that trust. I hear from innovation people if you just tell the story about what we are doing it would be much better. So we are not telling the story, and we are not giving predictable outcomes. And that is what Porter is saying with sustainable budgets. All of that is predictable. Give people the ability to predict their business atmosphere so they can be successful.

Chairman RICE. Okay. Let me ask you one more question and I am going to turn it back over. I am enjoying this.

If there was one thing that worries you, one thing that really needs to be fixed, okay, one thing that is costing you bringing jobs in, what is it?

Ms. MILLS. I would have to say the public education system, which I think is at the root of a lot of the problems that people are having with finding employees. And I do not think it is always as complicated as creating new programs. I think that we need to get back to focusing on basic blocking and tackling and making certain that every child has the opportunity to thrive and have all the skills necessary to work in one of these new, more complicated, more quantitative manufacturing jobs. It does not sound fast or easy, but I think it is one of the most important things.

Mr. HITT. I have to agree. Workforce development. When you are trying to locate a company, the first thing they want is a site. Once you get past the site, you are now in the competition for that. The next question is people, and are there qualified people that we can hire? So you have to throw everything at it. And you have to have customized training. You have to have apprenticeships. We have done all of these things to give people confidence in it. And let us remember, a generation ago when I was a young person, way back in the '50s and the '60s, our parents told us to get an education. Do not work in the mill. Well, it is a new day. Now, we are trying to get people to go back in the mill because, as Mr. Harberts said, it is a different mill. And we right now are working sort of against ourselves. I think we need to have innovation in education like manufacturing high schools or medical high schools or different sort of categories to create some excitement.

In South Carolina, we had a problem at my old employer trying to find people who could maintain all of our equipment. Very high-tech equipment in the plant. And we were spending enormous amounts of money training people to be equipment services people. We took a page out of the Germans. We even stole a word they made up called mechatronics and created a mechatronics program and it just took off. Why? Mechatronics sounded cool. Well, that is part of it. It is a marketing. We all want to be what we feel. We want to enjoy what we do. Our work is so much a part of what we do every day. So we need to attract people to this again, and that means we need to talk positively about it and what the success is to the children, but also to the parents who sometimes say, no, I do not want you doing that.

Ms. MILLS. And also sometimes to the school districts. I have heard companies that have gone to school districts and tried to create programs like this and been told, "No. Every child from this school is going to go on to college." Now, a lot of those students then went on to expensive, not very good colleges and have college

debt that they cannot repay and are much worse off on every level than they would have been if they had just been permitted to get really good skills and training in this area that this company wanted to train them in. But the attitude was that that was not acceptable.

Chairman RICE. Thank you. I yield. I yield to the ranking member.

Ms. CHU. I asked my questions and so, yeah.

Chairman RICE. All right. I have truly enjoyed this. I really have. Thank you very, very much. I have learned a lot. And I appreciate it.

Once again, I would like to thank you, thank the witnesses for appearing today. You have all provided important insight into how policy decisions in Washington impact small manufacturers operating in the real economy. I ask unanimous consent that the members and the public have five legislative days to insert statements and extraneous materials into the hearing record.

Hearing no objection, so ordered.

The Committee is now adjourned.

[Whereupon, at 3:12 p.m., the Subcommittee was adjourned.]

APPENDIX

Testimony of

Shirley E. Mills, CFA
Director, Senior Analyst, Opportunistic Value Team
The Boston Company Asset Management, LLC

Committee on Small Business
Subcommittee on Economic Growth, Tax and Capital Access
U.S. House of Representatives

Hearing on

Made in the USA:
Small Businesses and a New Domestic Manufacturing Renaissance

March 13, 2014

Chairman Rice and members of the House Subcommittee on Economic Growth, Tax and Capital Access, thank you for inviting me to speak today.

My name is Shirley Mills. I am a director and senior analyst for the Opportunistic Value Team at The Boston Company Asset Management. My responsibilities include investment analysis of U.S. industrial, utility and consumer companies. I graduated from Harvard Business School and *magna cum laude* from Columbia University, where I studied economics. I have been involved with investments in U.S.-based industrial companies for almost 15 years. As a result of investing mostly in small- and mid-cap companies, I meet frequently with a wide variety of industrial management teams and discuss their capital allocation and growth strategies. I am a member of the Boston Economic Club and Boston Security Analysts Society, for which I co-chair a committee leading BSAS's financial literacy partnerships. I also chair the board of Compass Working Capital, a nonprofit that provides innovative financial coaching programs for working low-income families.

Thank you for the opportunity to offer my perspective on the reshoring of manufacturing to the United States as it relates to small business. It is an honor to be here and brings back memories, as I spent the summer of 1997 working here at a foundation.

I'd first like to focus on the dynamics that drove manufacturing activity to leave the U.S. and grow abroad, which have now reversed and may be encouraging manufacturing growth in the U.S. Then I will address whether these trends are likely durable, and follow with some policy perspective.

I use the term reshoring to encompass any decision made to invest in capacity in the U.S. instead of offshore. Please note that manufacturing of specific products by specific companies doesn't need to "return" in order for the U.S. economy to benefit broadly from a stronger manufacturing economy and employment base driven by a broad-based trend toward manufacturing here.

Several years ago, I published a white paper citing a number of reasons for a potential shift of manufacturing capacity back to the U.S. The reasons that I highlighted then remain the case today. I'd like to quickly address each.

Share of manufacturing: Between 1970 and 2010, the U.S. share of global manufacturing shrank from 27% to 20%. That share remained constant in 2010-2012, as a result of 7% cumulative manufacturing output growth for the U.S. and world. China's share continued to increase as its output rose 18% between 2010 and 2012. The laggards were Japan, Italy, France and the U.K., rather than the U.S., indicating that the relative position of the U.S. globally is no longer deteriorating. This is very good news for your constituents and U.S. small business. *Please refer to Figure 1.*

U.S. manufacturing employment: This has continued to improve in tandem with the economic recovery. It has remained flat as a proportion of total employment over the past five years — an outcome that hasn't happened since the mid-1970s. This is more good news and provides evidence of manufacturing strength in the U.S. *Please refer to Figure 2.*

The dollar: A weaker dollar has played a role in making the U.S. more competitive, and it has remained relatively low, indicating no prospective change to competitiveness from currency dynamics for now. This supports ongoing manufacturing strength in the U.S. *Please refer to Figure 3.*

Wages: Wage differentials have narrowed between the U.S. and other key manufacturing economies and have remained relatively low, which explains why U.S. manufacturing has been growing more rapidly than European manufacturing in recent years. Additionally, wages in China have continued to climb, according to *The Economist*.[1] This looks set to continue, supporting ongoing manufacturing strength in the U.S. *Please refer to Figure 4.*

Energy costs: Due in large part to U.S. innovation and entrepreneurialism, natural gas prices have declined in the U.S. relative to global levels. The spread between U.S. and global natural gas prices remains wide, and the spread between U.S. crude oil prices against global benchmarks has begun to widen as well. This supports ongoing manufacturing strength in the U.S., as well as expansion of capacity by U.S. chemical and refining companies. *Please refer to Figure 5.*

Transportation costs: In recent years, global supply chains have become slower, more expensive and, in some ways, riskier. In part because of high crude prices, transportation costs have remained elevated, supporting manufacturing growth in the U.S. *Please refer to Figure 6.*

Conditions exist for reshoring, and it is happening

I believe that U.S. manufacturing is indeed growing more rapidly as a result of these changes.

Recent analysis by *The Economist* cites 100 firms that have reshored manufacturing, from appliances to high-tech devices.[2]

The Wall Street Journal recently highlighted a number of yarn companies that are spending millions of dollars on new capacity in North Carolina textile country and hiring hundreds of people.[3] None of the companies mentioned is based in the U.S., but this expansion will create opportunities for nearby small businesses.

Sometimes it is difficult to see significant trends in aggregate data, so it is worth noting that manufacturing employment is improving rapidly in areas that are benefiting more directly from lower energy prices. *Please refer to Figure 7.*

The cited willingness of large companies to invest in new capital spending in the U.S. is improving, which is very positive for the manufacturing employment outlook. According to consultancy ISI Group, willingness to invest in capacity in the U.S. has been improving for the past few years. *Please refer to Figure 8.*

Small business will benefit – not just manufacturers

I published my white paper in part because I heard investors frequently pointing to U.S.-based global manufacturers as beneficiaries of an improvement in U.S. manufacturing competitiveness. While those companies will benefit, their profitability is already at all-time highs, partly as a result of offshoring. I believe the more significant beneficiaries will be relatively smaller manufacturing companies that are not yet global. This is because they remain disproportionately U.S.-focused and will therefore benefit more from improved U.S. competitiveness.

I believe the most significant benefits of manufacturing reshoring will accrue to U.S.-located component suppliers, transportation companies such as truckers and railways, construction companies, raw-material producers, and utilities.

Secondary beneficiaries include manufacturing job growth, which is particularly positive for the U.S. labor force, given the employment multiplier associated with manufacturing activity. For every

manufacturing job created, one or two are created in other industries.[4] Improved employment in recovering manufacturing regions will also likely benefit some regional retailers and regional banks.

In addition, federal, state and local government budgets may improve, helped by higher tax revenues from economic growth and incremental investment.

Policies that can encourage this reshoring trend

Many drivers of improved U.S. manufacturing competitiveness that I have cited are beyond the scope of your committee; I will try to limit discussion of my policy perspective to factors that can support the externally driven trends.

Policy consistency and simplicity: Constant change in the regulatory and tax environment creates a headwind to decisions of any sort, particularly investment decisions. The industrial management teams I meet with often cite policy uncertainty as one reason they are investing so little in the U.S. Comments about the level of policy and regulatory uncertainty felt by management teams are so frequent that they seem clichéd.

Energy export policy: This area will become increasingly important to U.S. manufacturing in coming years. As I am sure you are aware, the U.S. now has minimal exports of LNG and crude oil for a variety of economic and regulatory reasons. If exports increase, the global price differential that I mentioned should narrow. That would weaken U.S. manufacturing momentum, particularly in industries with high input costs. It would therefore hurt small businesses, and the key beneficiaries would be producers and/or exporters – larger companies. Unfortunately, I do not see a "win-win" opportunity here, but rather tradeoffs and different beneficiaries depending on which decision is made.

Attention to success: As an equity investor, I constantly observe both the madness of crowds and the importance of compelling stories. The dominant story of the 1980s-2000s was offshoring. In some cases, it made economic sense for manufacturers. But in others, managers simply followed the herd, assuming that lower labor costs would mean lower total costs, although that was not always the case. According to a recent Harvard Business School survey, managers still believe that "wages are lower" in China.[5] That is strictly true, but according to my conversations with management teams, it may no longer always be the case on a productivity-adjusted basis. I have heard stories in which a narrow focus on labor costs has backfired because of quality-control difficulties, transport costs, working capital needs, intellectual property risks and even eminent domain. The dominant narrative matters because management teams do tend to follow the herd. Publicize examples of offshoring pitfalls and reshoring success. Changing the narrative will be an important part of changing these decisions.

A focus on likely candidates: Some products are more likely to be reshored successfully than others, and policy should be emphasized in these areas. Products with a higher likelihood of successful reshoring may have one or more of these characteristics:

- Expensive shipping costs (usually relatively heavy, bulky and low-value)
- High demand seasonality
- Significant needs for reliable, inexpensive energy or electricity
- A low proportion of costs from direct labor (whether through low labor content or high automation)
- A need for rapid product development or innovation

For example, appliances may be successfully reshored; holiday ornaments less so.

Clustering: Michael Porter of Harvard University has written extensively on what he calls clustering. I believe one implication of his work is that historically strong regional clusters are likely still areas of opportunity. Textile and furniture regions in the Carolinas may once again house more production, and the same may be true for high-end electronics in California. Memphis and Louisville could benefit from their central location and trade hub status. Regions with strength in defense manufacturing (which often has *had* to remain in the U.S.) may retain the knowledge to manufacture components that, for other industries, have gone abroad. I know a small-business entrepreneur who began manufacturing mugs in Ohio after importing them for two decades from China. He is from California, but found the existing infrastructure from the region's prior strength as a ceramics manufacturing hub helpful. Strengthening and building on existing infrastructure will make the decision to reshore easier for companies.

Encouragement of expansion: It is exciting to trumpet brand-new facilities, but encouraging investment that leverages existing facilities is more likely to have a significant impact in favor of the U.S. Expansion is often an easier decision than building anew because of existing property infrastructure, transportation infrastructure and workforce awareness. For example, I recently toured a plant in my home state of New Hampshire, where a midsized manufacturer expanded its capacity at a plant that had been in operation for decades, bringing some components directly back from a plant in China that had been manufacturing them.

Innovation: The reshoring trend is due in part to hydraulic fracturing, in part to automation and other technological innovations that have allowed for greater U.S. productivity, and potentially even in part to 3D manufacturing, which can improve prototyping productivity for the types of near-to-the-customer products that are already candidates for reshoring. Innovation is a strong differentiator for our economy and should continue to be encouraged. The government must play its key role in basic science research, as the private-sector emphasizes rapid commercialization at the expense of fundamental discoveries. Effective immigration for the highly skilled and educated is also necessary if we are to make the most of our innovative potential.

Employee development: Access to a flexible, skilled labor force has become a barrier to U.S. manufacturing, as offshoring caused a generation to miss out on on-the-job apprenticeship training. More formal job-training support should be a key focus area, again building on pockets of existing expertise and incentivizing companies rather than setting up inflexible centralized training programs. In some depressed regions, expanded social services may be needed to help the long-term unemployed adapt and re-enter the workforce.

Incentives and tax reform: When companies consider shifting manufacturing locations, they often mention negotiated financing and tax incentives, which should be considered on a case-by-case basis, particularly because they are often part of an incentive package abroad. Smaller, more domestically focused companies have higher effective tax rates than global corporations, which can use sophisticated tax planning to optimize their tax obligations. According to *The Economist*, in the current tax system, "The losers are smaller companies, which have less room for manouevre."[6] Appropriate corporate tax reform and simplification could improve the relative competitiveness of U.S. manufacturing versus other locations and of smaller companies versus larger companies.

Capital access: For larger companies, various data indicate that capital access has improved. For smaller companies of the size this committee represents, access to capital is still frequently mentioned as a constraint to expansion. Some have told the press that they were better able to access expansion

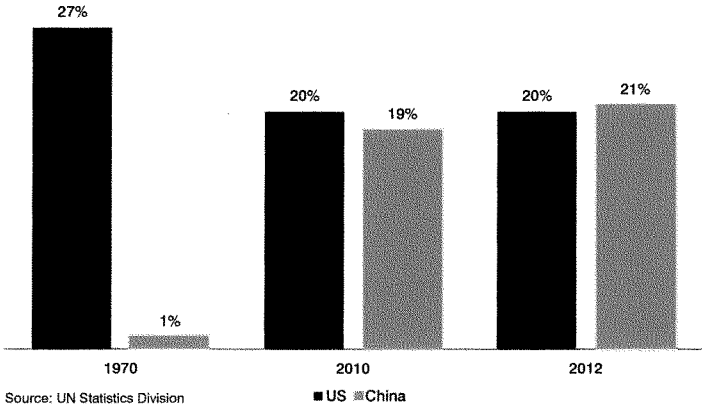
financing in China than in the U.S. Though this could be changing as China has its own troubles now, this factor could be addressed from a policy perspective.[7]

Regulatory environment: The regulatory burden for small companies is significant in the U.S., and according to the World Economic Forum, our global rank in the burden of government regulation is deteriorating.[8] Although the U.S. is continually ranked one of the best places from an overall ease-of-business perspective (for example in the World Bank's ranking) its rank has been falling.[9] This is important to small-business prospects because larger companies are better equipped to navigate complex regulatory environments and may encourage regulations that favor large companies. According to *The Economist*, "since lobbying is mostly confined to large, established companies, the question is whether it discriminates against small, innovative groups. Complex regulations act as a barrier to entry."[10] Actions like the Regulatory Flexibility Improvements Act will be important for small businesses to remain competitive with larger U.S. and foreign companies. Effective antitrust regulation is also key, to prevent creation of concentrated supply chains and/or monopolistic powers that exclude potential new entrants and associated innovation.

Time doesn't roll backwards. For U.S. manufacturing and its workforce, the world is much more competitive than it once was. It can be tempting to talk about "jobs coming back," but that is not quite accurate. Rather, incremental investment in American manufacturing may create new and different jobs. They may be higher-skilled and higher-paid than those that were lost, but there will probably be fewer of them. The broader benefit to U.S. employment — particularly lower-skill employment — will come from associated services, such as trucking, distribution, retail and banking. Efforts to recreate what once was are likely to fail.

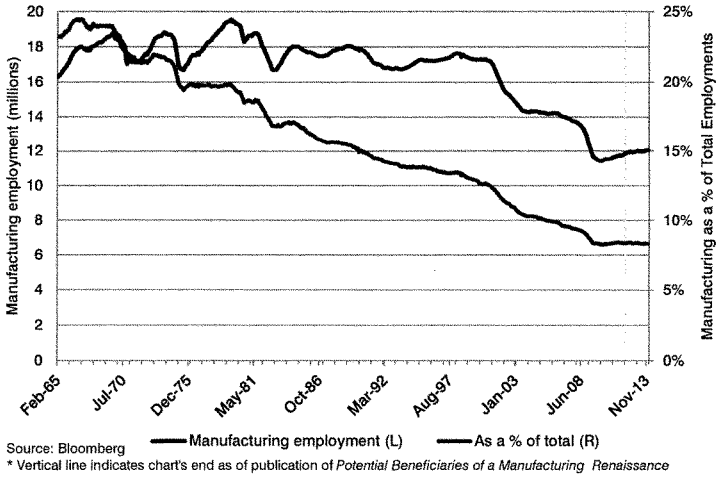
Thank you for the opportunity to offer my perspective on the reshoring of manufacturing to the U.S. as it relates to small business.

Figure 1: Share of Global Manufacturing Output: U.S. and China



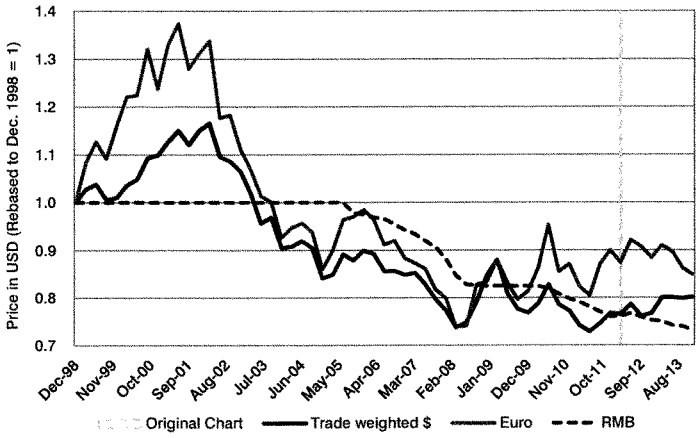
Source: UN Statistics Division
*Prior to 2005, China did not report Manufacturing, so China is based on Mining, Manufacturing,and Utilities.
* 2010 data were most current when *Potential Beneficiaries of a Manufacturing Renaissance* was published.

Figure 2: U.S. Manufacturing Employment, 1965–2014



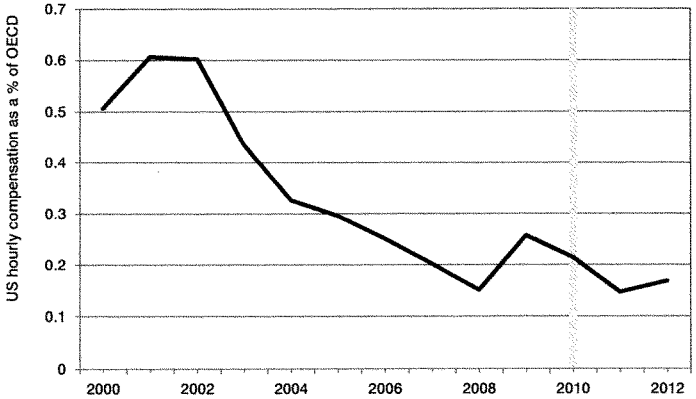
Source: Bloomberg
* Vertical line indicates chart's end as of publication of *Potential Beneficiaries of a Manufacturing Renaissance*

Figure 3: U.S. Dollar Decline, 1998–2013



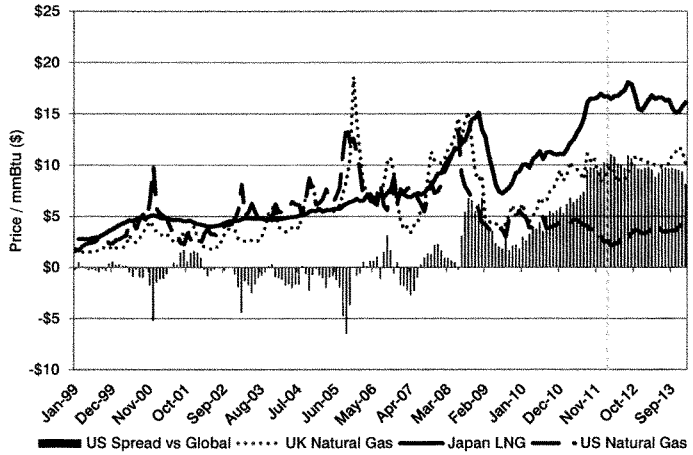
Source: Bloomberg
* Vertical line indicates chart's end as of publication of *Potential Beneficiaries of a Manufacturing Renaissance*

Figure 4: U.S. Hourly Manufacturing Compensation: Premium to OECD Average, 2000–2012



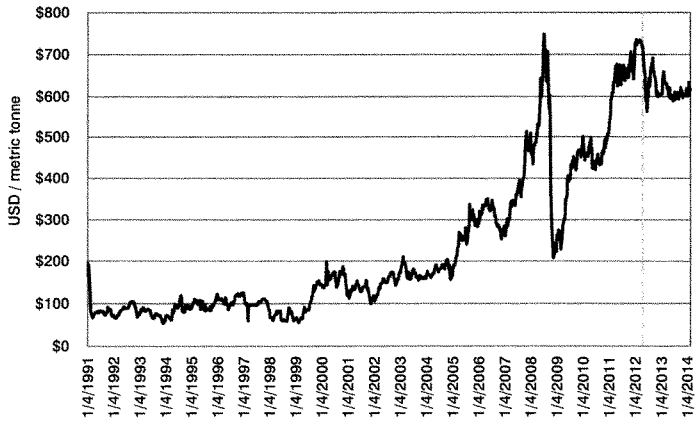
Source: The Conference Board Inc.
* Vertical line indicates chart's end as of publication of *Potential Beneficiaries of a Manufacturing Renaissance*

Figure 5: Global and U.S. Natural Gas Prices and the Spread Between Them



Source: Bloomberg
Vertical line indicates chart's end as of publication of *Potential Beneficiaries of a Manufacturing Renaissance*

Figure 6: Bunker Fuel Prices, 1991–2014



Source: Bloomberg
* Vertical line indicates chart's end as of publication of *Potential Beneficiaries of a Manufacturing Renaissance*

Figure 7: U.S. Manufacturing Employment: MI, ND, SD, WY, IN, ID, UT, WI, WA, SC, MT, TN, CO, IA, TX

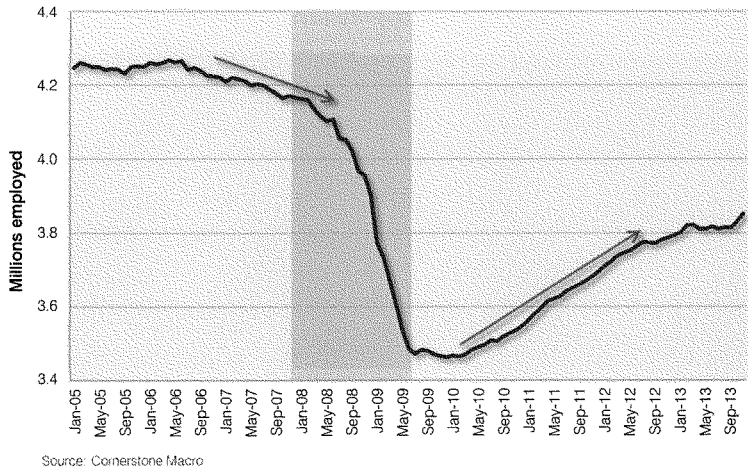


Figure 8: U.S. Share of Capex Intentions

Is the **U.S. winning a greater share of your capex** spending relative to recent history?

	% Yes
May 2012	27%
Nov 2012	33%
Jun 2013	38%
Nov 2013	51%

Source: ISI Company Surveys

The statements and opinions expressed in this document are those of Shirley Mills, CFA, as of March 13, 2014, are subject to change as economic and market conditions dictate, and do not represent the views of The Boston Company Asset Management, LLC, or The Bank of New York Mellon.

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http://www.cleveland.com/business/index.ssf/2013/03/reshoring_conference_to_study.html

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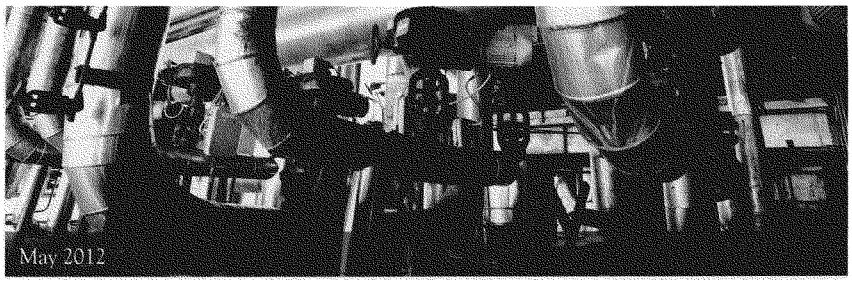

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Potential Beneficiaries of a U.S. Manufacturing Renaissance

Executive Summary

Many incremental changes over the past decade have allowed U.S. manufacturing to become progressively more globally competitive. Recently, the cumulative effect of this improvement in competitiveness has reached a tipping point that may set the stage for a revival in U.S. manufacturing employment. Although much press and investor discussion identifies investment opportunities in multinational manufacturing giants as a result of this, our view is that the best opportunities lie elsewhere in the U.S. economy. A significant revival in manufacturing employment growth would be likely to substantially improve the employment and wage outlook for the American labor force. That, along with higher manufacturing and industrial activity occurring within the U.S., would lead to investment opportunities in small and midsize U.S.-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 "U.S. 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 noticed 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 U.S., some began considering expanding their American manufacturing footprint for the first time in many years.

Despite all the latest talk of a U.S. manufacturing renaissance, we believe its potential impact on U.S. investment opportunities remains misunderstood. Our perspective is that if the U.S. 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 U.S. economic wage growth.

The resulting investment opportunities will be found across the breadth of the U.S. economy, in small and midsize U.S.-focused industrial suppliers and in other sectors of the economy, such as banks and retail. Some investors suggest that large U.S.-based manufacturing companies will reap significant benefits, but many such global firms aren't tightly tied to the health of the American manufacturing economy. At the top three U.S. manufacturers by market cap, domestic sales represent, on average, only 44%

[1] "Natural Gas Signals a Manufacturing Renaissance," New York Times, April 10, 2012.

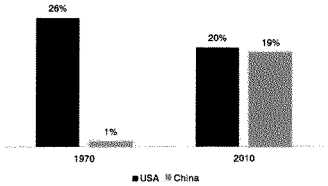
Any statements of opinion constitute only current opinions of The Boston Company Asset Management, LLC (TBCAM), which are subject to change and which TBCAM does not undertake to update. Due to, among other things, the volatile nature of the markets and the investment areas discussed herein, they may only be suitable for certain investors.

of revenue, and their asset footprints are only slightly more tilted toward the U.S. than their revenue.[2]

The Decline of U.S. 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% in the same time frame, gaining 6 points from the U.S., 7 from Germany, 4 from the U.K. and 2 each from Italy, France and Japan. (See Exhibit 1.)

Exhibit 1: U.S. and China Share of Global Manufacturing Output

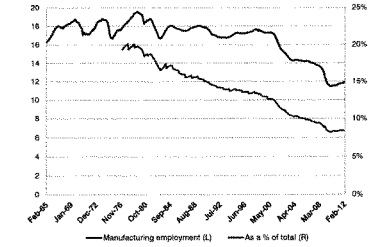


Source: UN Statistics Division, TBCAM

From 1970 to 1990, American manufacturing employment didn't decline, but rather lost share to rapidly growing services jobs. The number of manufacturing jobs fluctuated near 17 million between 1965 and 1998, but declined from 20% to 13% of total U.S. employment.

Then manufacturing employment began a rapid decline – 6 million American manufacturing jobs disappeared between 1998 and 2010. In today's labor force base of 142 million people,[3] those jobs would reduce the unemployment rate by 4 percentage points. (See Exhibit 2.)

Exhibit 2: U.S. Manufacturing Employment, 1965-2012



Source: U.S. Bureau of Labor Statistics, TBCAM

Why did U.S. manufacturing jobs disappear so quickly? Much ink has been spilled trying to identify a single source, with most arguments centered on offshoring and productivity improvements. At that time, when management teams were deciding where to locate production, they most frequently concluded that it made more sense to send production abroad due to far lower labor costs, stable currencies, potentially lower raw material prices, ease of supply-chain implementation and low political risk.

A recent McKinsey report concluded that more job losses occurred due to productivity than offshoring, but nonetheless estimated that if the U.S. 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 U.S. manufacturing employment spread far beyond the manufacturing sector. It created an excess supply of labor that has suppressed wages, as evidenced by the 7% decline in median U.S. real wages between 2000 and 2010.[5] Painful though it has been for the country economically and politically, the decline in real wages may be one way in which the uncompetitive U.S. manufacturing sector of the early 2000s has healed itself.

Why Things May Be Different Now

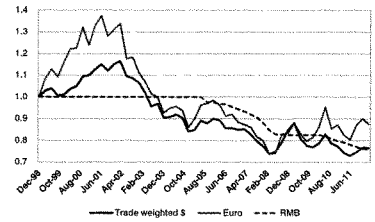
Quite a few factors that caused the rapid loss of U.S. manufacturing jobs appear to be on the mend. None of these shifts is seismic on its own, but taken together, they are driving the change in tone we have heard from management teams and may herald the beginning of an improvement in U.S. manufacturing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

1. **The dollar has weakened.**

   The decline of the U.S. dollar has reduced the relative cost of U.S. wages and inputs in comparison with other locations. The U.S. 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 U.S. labor costs relative to other countries and also makes U.S. exports more globally competitive. (See Exhibit 3.)

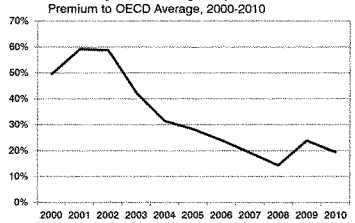
[2] FactSet, The Boston Company Asset Management, LLC
[3] Bloomberg, Bureau of Labor Statistics
[4] "Trading Myths," McKinsey Global Institute, May 2012, 2. Print.
[5] "Bleak News for Americans' Income," The Wall Street Journal, October 13, 2011.

Exhibit 3: U.S. Dollar Decline, 1998-2012



Source: Capital Markets Outlook Group, Bloomberg, TBCAM

Exhibit 4: U.S. Hourly Manufacturing Compensation: Premium to OECD Average, 2000-2010



Sources: ISI Group, Bureau of Labor Statistics, TBCAM

2. **Wage differentials have narrowed between U.S. and key manufacturing economies.**

Wages are an important factor for companies when deciding where to locate production. Although labor 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.

In 2000, Chinese wages, according to Boston Consulting Group (BCG), were 3% of American levels. Companies that produced high-labor-content goods were simply able to arbitrage lower wage rates in China. This has been most visible in apparel, where labor 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 U.S. 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, U.S. labor 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 labor cost savings narrows from 65% to 39%.

Competition with Chinese labor 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 U.S. 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 U.S. market. (See Exhibit 4.)

Automation is an important determinant of the labor 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 labor content in some goods, automation may bring incremental job growth to the U.S. 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 U.S. natural gas prices from $13 per million British thermal units in 2008 (and also 2005) to approximately $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 U.S. have led to a reduction in input prices for many manufacturing activities in America that has not occurred in other markets.

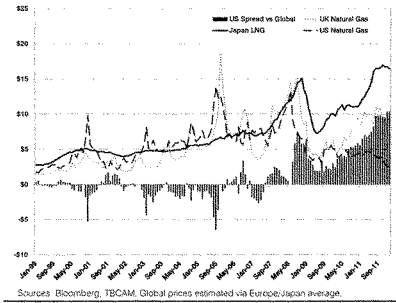
The decline in U.S. natural gas costs has broad implications, all of which lower manufacturing costs in the U.S.:

- 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 U.S.
- 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

[6] "Made in America, Again," Boston Consulting Group, August 2011, 9.
[7] ISI Group, Financial Times
[8] "Making it in America," The Atlantic, January/February 2012.

is rapidly developing. The potential to displace high-priced oil as a transportation fuel has many positive implications for the U.S. consumer and U.S. trade deficit. (See Exhibit 5.)

Exhibit 5: Global and U.S. Natural Gas Prices and the Spread Between Them



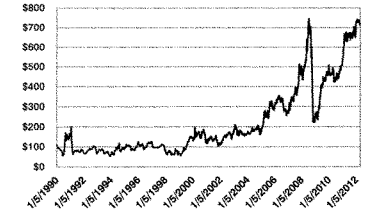
Sources: Bloomberg, TBCAM. Global prices estimated via Europe/Japan average.

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

The cost of shipping goods around the globe 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 minimize 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 Exhibit 6.)

Exhibit 6: Bunker Fuel Prices, 1990-2012



Sources: 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 siting production abroad. Examples include nationalization (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 unauthorized production that is then sold internationally.

Regarding China specifically, companies we speak with 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 labor 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., summarized 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 identify areas of potential change and their implications rapidly enough 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 U.S. 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 U.S. manufacturing activity and employment. Yet, despite the proliferation of discussion about a U.S. manufacturing renaissance, skepticism remains pervasive and we believe the investment opportunities remain misunderstood.

Signs we see that confirm this change is presently occurring:

When our firm began discussing this topic, we began watching for announcements about new plants or plant expansions in the U.S., 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 U.S. 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 U.S., citing high transport costs.

In February 2012, U.S. 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 can't be filled because American workers don't have the appropriate skills. As that changes, the growth rate of manufacturing jobs could accelerate further.

Some investment opportunities created by this change in the U.S. economic environment:

Given that the decade of the 2000s was one of rapid automating and offshoring of labor-intensive U.S. manufacturing activity, driving the destruction of 6 million American manufacturing jobs, what does it signify that those trends may be changing?

U.S. and non-U.S. companies are likely to open manufacturing facilities in the U.S., driving manufacturing job growth, which is particularly positive for the American labor 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 labor, 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 U.S.-based multinational manufacturing companies. However, we believe those companies have benefited from the trends of the past decade. They have built globally optimized manufacturing footprints: If the U.S. becomes more competitive, those footprints may become a hindrance to profitability rather than a tailwind. In 2012, most U.S.-based multinationals are earning as much as they've ever earned before, on higher profit margins than ever before. Excluding a few companies that aren't representative due to spin-offs or excessive exposure to

[9] Immelt, Jeffrey. "The CEO of General Electric On Sparking an American Manufacturing Renewal." Harvard Business Review. March 2012. 44. Print.
[10] "Community Colleges: Restoration Drama." The Economist, April 28, 2012.
[11] Bivens, Josh. "Updated Employment Multipliers for the U.S. Economy." Economic Policy Institute. August 2003.

finance or defense, the top 10 U.S.-based manufacturers by market cap 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 U.S. manufacturing.

Our perspective is that due to the strong multiplier effect of manufacturing jobs, the beneficiaries of a U.S. manufacturing renaissance will be found in small and midsize, U.S.-focused industrial suppliers and in other sectors of the economy. These include U.S.-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 $500 million budget surplus due to unanticipated revenue growth, after a decade of decline.[13]

Potential Winners

Growth in manufacturing production in the U.S. 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 midsize U.S.-based suppliers to manufacturing, U.S.-focused industrial distributors and U.S.-focused automation companies.

Manufacturing activity that occurs within North America could drive growth in U.S. freight volumes, because such activity tends to involve more intranational 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 U.S. chemical companies, U.S. natural gas producers (provided they can capture some of the higher global prices through 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 U.S. 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 intranational. 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 U.S. Manufacturing Renaissance Might Stall

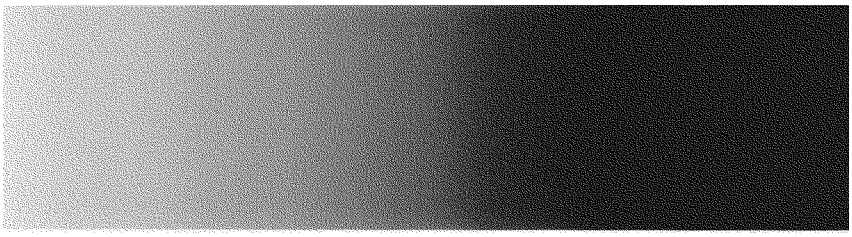
The future is uncertain, and the idea of a U.S. manufacturing renaissance that improves the relative position of labor in the U.S. economy is still mostly just a hypothesis. Any substantial reversion of the dynamics we've identified could cause these trends to revert, in which case the late Apple Inc. 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 U.S. and the rest of the world is a significant risk, whether it comes from higher U.S. prices or lower prices abroad. Lastly, there are strong manufacturing clusters outside the U.S. — for example, in consumer electronics — that could keep some goods manufactured abroad for years to come.

[12] FactSet; TBCAM

[13] Davey, Monica. "Surplus Surprises Michigan, but Is It Safe to Spend Again?" New York Times, February 8, 2012.

[14] Duhig, Charles, and Bradsher, Keith. "How the U.S. Lost Out on iPhone Work," New York Times, January 12, 2012



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Vice President, Senior Research Analyst

Shirley is a Senior Research Analyst supporting the US Opportunistic Value strategies. Her primary areas of coverage are the industrial and utility sectors.

Shirley joined The Boston Company and the Opportunistic Value Team in 2007. Shirley began her career as a generalist on a team-managed large-cap core equity portfolio at Goldman Sachs Asset Management. She then became an analyst and member of the Investment Committee at Steinberg Asset Management, where she covered small and mid cap stocks in the consumer, industrial, energy and financial sectors.

Shirley graduated magna cum laude from Columbia University with a BA in Economics and earned an MBA from Harvard Business School. Shirley is a CFA charterholder and a member of the Boston Economic Club and Boston Committee on Foreign Relations.

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U.S. House Small Business Committee

Subcommittee on Economic Growth, Tax and Capital Access

"Made in the U.S.A.: Small Businesses and

a New Domestic Manufacturing Renaissance"

Secretary of Commerce Bobby Hitt,

South Carolina Department of Commerce

Good afternoon, Chairman Rice, Ranking Member Chu and members of the Subcommittee. Thank you for the opportunity to provide testimony on today's subject: the re-shoring of manufacturing in the United States and its broader impacts within the business community.

Many industry observers have been talking about a manufacturing resurgence or 'renaissance' happening in the United States for the past few years. Research from the Boston Consulting Group confirms the trend, as you have heard this afternoon.

On the national level, between January 2011 and December 2013, the U.S. added 434,000 manufacturing jobs, a gain of 3.7 percent. This rebound follows a decade-long decline in manufacturing employment at the national level, where nearly five and half million manufacturing jobs were lost, a decline of 32 percent.

Speaking on behalf of South Carolina's lead economic development agency, our state is at the forefront of the manufacturing revival today. South Carolina, while a small state in physical size, has had a traditionally strong manufacturing presence. This sector continues to gain momentum.

South Carolina's manufacturing GDP was $28.7 billion in 2012. This is approximately 16.3 percent of the state's overall economy, a larger share than on the national level, where manufacturing accounts for 12 percent of the U.S. economy.

Between the end of the recession (July 2009) and December of 2013, South Carolina added 15,600 manufacturing jobs, an increase of 7.4 percent—more than double the rate of growth on the national scale over the same time frame.

According to a report released by the U.S. Department of Commerce's Bureau of Economic Analysis, South Carolina is the fastest-growing manufacturing economy in the Southeast.

The report also ranked South Carolina's economy as the 12th fastest growing in the nation, and tied with North Carolina as the fastest growing state on the East Coast.

We are known as a heavy weight in the aerospace and automotive sectors, with the highest per capita employment by foreign-owned companies. For these reasons, the national trade press has given us the moniker "Beast of the Southeast," which we wear with great pride.

Twenty years ago, it was a very different conversation. Manufacturing was picking up and moving out of the United States and South Carolina. Hardest hit in the state was the textile industry, which shed some 60,000 textile mill jobs and 12,000 apparel jobs over a 10-year period (from 1998–2008) in South Carolina alone.

At the same time, however, the automotive sector was taking root in our state, anchored by German automaker BMW, where I spent 18 years of my career and where I developed a personal passion for manufacturing. Today, there are more than 45,000 South Carolinians employed by the automotive industry in the state.

More recently, we have successfully recruited the aerospace industry to South Carolina, including Boeing's 787 assembly operation, and our state has three of the top four global tire makers.

There are several forces driving this re-shoring and on-shoring of manufacturing to the U.S. today.

Logistics is a driving force, as companies are seeking savings in transportation costs. Companies are moving back to the U.S. to get products to market faster and respond rapidly to customer orders in a just-in-time manufacturing environment.

Workforce considerations and the desire to have influence over the quality of the finished product are of importance, as are lower energy costs and competitive costs for land.

Recent announcements reinforce that on-shoring is occurring in South Carolina. In 2013 alone, nearly $981 million in capital investment and 1,200 new jobs were announced by manufacturers bringing their operations to South Carolina from overseas. The companies range in size and scope.

Some recent examples of on-shoring in South Carolina include:

Silcotech, a maker of silicone-based injection molding for the medical industry based in Canada, selected York County for its U.S. plant. The company is investing $3.5 million and creating around 50 new jobs.

Last year, three Walmart suppliers announced new facilities in South Carolina as part of Walmart's U.S. manufacturing initiative. Collectively, these three companies represent 800 new jobs and more than $14 million n investment.

Importantly, these announcements are occurring in our state's rural areas. In the past three years, more than 30 percent of the projects we've announced in South Carolina and nearly a quarter of the jobs created have gone into the state's rural counties.

The Walmart suppliers locating in our state include Kent International, a bicycle company; Element Electronics, a maker of televisions; and Louis Hornick and Company, which produces window coverings and home textiles.

Yes, textiles are returning to the U.S. Another prominent example for South Carolina is The Keer Group, a Chinese textile company, which decided to build its first plant outside of China in Lancaster County, South Carolina, where they will produce industrial

yarn. The company's $218 million investment is expected to create 501 jobs.

Of course, when speaking about manufacturing, by and large, these are larger operations employing hundreds, if not thousands, of workers, who assemble products ranging from cars, to planes to tires.

The reason is that manufacturing facilities are becoming much more capital intensive. The average amount of capital invested by companies per manufacturing job created in South Carolina has more than doubled in just four years' time. In 2013, this figure was $424,000 of capital per job created versus $176,000 in 2009. This points to the fact that, overall, most manufacturing requires a large amount of capital and is difficult to grow to a meaningful scale for traditional small businesses.

Where the small business community typically reaps benefits from manufacturing in our state is either by providing a value-added service in direct support of the manufacturing operation (such as machining or repair) or by providing other services like janitorial, staffing or subcontracting on construction projects.

For South Carolina, the jobs multiplier for automotive manufacturing, for instance, is approximately four, meaning that for every automotive manufacturing job created in the state, three additional jobs in a variety of service and support functions are created. Most of these jobs are in small businesses. Other industries like aerospace, food products and machinery manufacturing have similarly high jobs multipliers.

There are also examples in our state of manufacturing contract work that has been on-shored to manufacturing operations of fewer than 100 employees. This includes Sargent Metal, which contracts with Otis Elevator and ADEX Machining, which provides value-added work for the aerospace sector. In these cases, being Made in the U.S.A. offers a highly skilled workforce, lean manufacturing processes, as well as cutting-edge technological advances and world-class infrastructure.

The Department of Commerce's mission is to recruit business to the state and to help existing businesses grow. Commerce has positioned itself as being the state's business agency—no matter the size of that business. An area we have strived to augment over the past three years is our small business area, which offers resources and programs specifically aimed at the small business community.

These programs include exporting assistance, which has been the beneficiary of federal funds through the STEP program (State Trade and Export Promotion). From 2011 to 2013, our staff has helped 59 small-and-medium-sized enterprises enter 24 export markets, resulting in $3.7 million in sales.

Additionally, we have hosted a series of events pairing small business owners with prospective lenders—something akin to "speed dating" for acquiring a business loan.

The Department of Commerce works to connect the dots between small business and large industry. To accomplish this, we host sup-

plier outreach events and have a "Buy South Carolina" program to bring together industry's needs with businesses in the state that can fulfill them.

One recent success is Continental Tire, which is investing a total of $500 million and creating 1,600 jobs in Sumter, South Carolina. The tire maker announced in January that it has awarded some $100 million in contracts to South Carolina companies to date, an example of the ripple effect that occurs when a company of its scale locates in our state.

With this positive momentum, how can we encourage this growth curve to continue?

Success hinges on many factors, but I see three things as being the most crucial to our recruitment efforts: sites, infrastructure and workforce.

We continue to place emphasis on building our statewide inventory of suitable sites and buildings to show prospects. As a state, we are offering financial assistance to counties for site development and encouraging collaboration among regions for multi-county parks.

Certainly infrastructure is critical. This ranges from our transportation infrastructure, including our seaport assets, roadways and rail network; to utility infrastructure like water and sewer. The federal Community Development Block Grant program as well as our state's Rural Infrastructure Authority are helping to address the infrastructure needs in South Carolina's lesser developed areas. Bringing this crucial infrastructure online helps "set the table" for economic development to happen.

And finally, workforce development is vitally important. South Carolina has invested in training programs that provide company-specific training and apprenticeship opportunities. These programs, readySC and Apprenticeship Carolina, are rated among the best in the nation.

Overall, the industry points to a need to encourage more young people to explore manufacturing as a career in order to get them into the pipeline. Today, the biggest deficiencies are in trained technical positions with a two-year technical degree, such as industrial maintenance and precision manufacturing, as well as four-year STEM fields such as engineering and information technology.

In closing, South Carolina is benefiting in a large way from manufacturing investment, and I believe there will continue to be opportunities for our small business community to profit from the manufacturing renaissance. The adage "a rising tide floats all boats" certainly fits.

Again, thank you to the leadership and members of the Subcommittee for the invitation to address you today. Manufacturing is a personal passion of mine, and I appreciate the opportunity to share the South Carolina story.

# # #

Written Testimony of Kevin Harberts

President/CEO

of

Kryton Engineered Metals, Inc.

Before the

House Committee on Small Business

Subcommittee on Economic Growth, Tax, and Capital Access

"Made in the U.S.A.: Small Businesses and a New Domestic Manufacturing Renaissance"

March 13, 2014

Thank you for the opportunity to testify before you today. My name is Kevin Harberts, President and CEO of Kryton Engineered Metals in Cedar Falls, Iowa. I think this hearing is a great opportunity to showcase manufacturing in America and shed light on an issue which crosses political lines and international borders.

Since our founding in 1981, Kryton Metals has become an industry leader in manufacturing spun and fabricated metal products. We service a range of industries including foundries, ventilation, lighting, aerospace and automotive. Many of our products contribute to enhancing the nation's energy efficiency and are installed in LEED-Certified buildings around the country.

This time a year ago we had 63 employees; today we have grown to 71 and hope to hire another 8–12 this year. We attribute this growth directly to reshoring—a product line which left the U.S. a decade ago and came back to America's heartland. But to understand our growth, you have to first understand how we got here.

Like many other companies in our industry, the Great Recession hit us especially hard. In 2008 and 2009, we had to lay off 35 employees due to the downturn. For any family-owned business, this is one of the most difficult things to do, but it was necessary for us to survive.

Then, about two years ago, we became aware of a life changing opportunity. A company sourcing from Europe was exploring whether they could return the manufacturing to the U.S. and find a supplier with competitive pricing to serve the North American market. We made some prototypes to demonstrate we had the capabilities but the real test was the price. In our industry, a price differential of a fraction of one penny can mean the difference between getting the job and missing out.

At the time, we were not in a position to hire more employees to meet the demand so, like all manufacturers; we learned to do more with less. The company invested heavily in a laser machine specifically so we would service the customer and increase automa-

tion to meet their target price and we were able to convince this company to reshore the work. We made these investments despite the significant risks and the environment of the Great Recession.

Our customer slowly began transferring the work to our shop in Iowa and we are now looking at a $5–6 million product line. For a $10 million a year company, this changed the fate of our business and the lives of our employees.

Foreign manufacturers choose to reshore and source from U.S. suppliers for several reasons such as price, quality, availability of raw materials such as steel, and location. In our case, the customer wanted to source from a U.S. supplier so that it can ship products both to Illinois and Monterey, Mexico. We not only convinced the customer that our prices are competitive but demonstrated the obvious—Iowa is much closer to Illinois and Mexico than the customer's supplier in Europe.

Prior to reshoring its business, the customer had to wait two months from the time it placed its order with Europe to receive the products in North America. After reshoring, its delivery time went from two months to two weeks.

These time savings are a significant advantage we provide to our customer over its competitors. We can develop new products for it in a matter of weeks rather than wait for a ship to cross the Atlantic. This is especially important because, while I work in a "just-in-time" industry, we all live in a "just-in time" world where the consumer wants the latest technology and wants it today.

The decision of our customer to supply from Kryton Metals will carry us into 2020. We are currently running 50 SKUs for them and plan to grow to 300–400 by the end of 2015. We are going to save our customer money, grow our business, and—most importantly—create jobs in Iowa and throughout our entire U.S. supply chain.

These kinds of opportunities just don't happen often in our industry and are directly related to reshoring. In convincing the customer to bring the work back to the U.S. from overseas, we not only created jobs at Kryton Metals, but created jobs for our suppliers and vendors as well. For example, my raw material purchases have increased fourfold due to this reshored business which created the need for suppliers to also hire new employees to meet the demand. This is an important point about the manufacturing industry—not only do we directly employee 12 million Americans, but our industry indirectly supports a combined 18 million jobs.

Although we are currently experiencing tremendous growth, it hasn't come easily and it's not guaranteed to continue. We are now in danger of becoming a victim of our own success. We expanded our operations at such a rapid rate that I cannot find enough qualified employees to fill my job openings. While we succeeded in convincing a company to bring overseas work to the U.S., I can't expand our business without qualified employees.

Earlier I mentioned that Kryton Metals hopes to hire 8–12 more Iowans this year. This may not seem like much but, for a 70-person company, it amounts to a significant expansion. Furthermore, the

positions manufacturers create are solid careers, not mere minimum wage jobs. For some of my openings, the starting salary is $70,000–80,000 a year plus benefits.

Additionally, the uncertainty in Washington has the potential to hinder manufacturers' future growth and reshoring successes. While politicians argue among themselves, employers like me are stuck in a holding pattern. We don't know whether Congress will extend the R&D Tax Credit, we're unsure what new rules OSHA and the EPA will impose on us, and we can't find qualified workers in large part because Congress has not updated our job training laws in over a decade.

The federal government needs to help foster an environment in which businesses from around the world want to reshore work to the United States. Domestic manufacturers can only lower their prices so far we're not changing our location. Which leaves federal government policy and instability.

Kryton Metal's future looks pretty sunny at the moment but manufacturing's future is incredibly cloudy. Although the economy is improving, it isn't doing so at the rate we need to grow American manufacturing. To improve manufacturing's forecast, we must look to overseas opportunities and convince foreign customers that the U.S. is THE place for manufacturing. Manufacturers are dong our part to encourage reshoring—now its Washington's turn.

Thank you for allowing me to testify today and to highlight the great story that is manufacturing in America.

CHESAPEAKE BAY CANDLE®

Testimony Of:

Ms. Mei Xu

CEO and Co-Founder
Pacific Trade International & Chesapeake Bay Candle

U.S. House Small Business Committee
Subcommittee on Economic Growth, Tax and Capital Access

Hearing:
"Made in the U.S.A.: Small Businesses and a New Domestic Manufacturing Renaissance"

Thursday, March 13, 2014 at 1:00 PM
2360 Rayburn House Office Building

Thank you for inviting me Chairman Rice, Congresswoman Chu, and distinguished members:

Pacific Trade International (PTI) is one of the leading home fragrance suppliers in the U.S., with 130 employees and nearly $60M in sales. Marketed under the Chesapeake Bay Candle, BlissLiving Home and Alassis brands, PTI fragranced candles, diffusers and accessories are sold in major U.S. retailers such as Target, Kohl's, TJ Maxx, Marshall's and Home Goods.

Since 1994, PTI's products were produced and sourced from factories in China and Vietnam. PTI held an ownership stake in these factories and could depend on a reliable, high-quality supply chain. Beginning in 2008, we saw a rapid increase in the costs of labor, freight and materials in Asia, and also an increased demand for faster replenishment cycles from our U.S. customers due to the financial crisis and the need for lean inventory. The pressures on cost and inventory led PTI to become one the earliest proponents of "in-sourcing". The following reasons pushed us to make the U.S. our final destination for manufacturing operations, rather than considering traditionally less expensive countries such as Mexico and Poland:

1) Speed to Market

Our U.S. factory can deliver replenishment orders with one week, vs. 4 to 5 weeks from Asia. This makes our factory attractive for retailers particularly on seasonally sensitive products.

2) Cost of Shipping and Logistics

Avoiding transnational shipping and relying only on domestic shipping cut unpredictable cost variations due to oil price fluctuations and the constant demand-supply changes that impact ocean line prices.

3) Production costs

Automated equipment used in the U.S. makes per unit production costs close to that of labor costs in Asia and delivers consistent, higher quality.

For these reasons, we decided to settle in Maryland where the brand was initially launched and where we are headquartered.

We found a number of unoccupied warehouses along the I–695 corridor near Baltimore. The number was staggering. 1 out of every 4 blue-collar workers was unemployed. We decided to build our factory there, taking advantage of the abundant warehouse space. We also wanted to give back to the community by employing local staff.

Built without government incentives or support from local agencies, PTI's new factory in Glen Burnie, MD, was budgeted to cost approximately $4M in capital investments, working capital for start-up, and inventory.

We were unable to identify any source of available government financing that did not require a lengthy application and approval process. The Maryland Economic Develop Council offered the possibility of low-interest rate financing, but the review process proved

to be too lengthy and the funding limits too restrictive to meet our needs. In the absence of viable funding options, the company proceeded with the project from its cash reserves, hurting its cash flow and liquidity.

The time to completion from initial lease execution was planned to be approximately 6–8 months with completion planned for Q4 2010.

In reality, the project took 5 months longer and ran $2M over budget due to complications arising from the need for us to make the new facility compliant with all relevant codes for permitting. The state had not opened a factory for almost two decades. As a result, codes for manufacturing facilities were outdated. The lack of guidance from local and state agencies made the process more time-consuming and costly as we had to hire an architect, three engineering firms, and a general contractor to help sort through the design issues related to code compliance and permitting. Although we started to occupy the warehouse and pay for key staff as planned, the planned production start date was delayed from late 2010 to mid-2011. This delay resulted in losses from operating expenses carried before production could begin.

In the timeline below, the actual permit delay was two months due to redesign for compliance issues. Prior to that, there was a delay of at least one month due to confusion of code-related design issues. There was also another one-month delay related to construction of HAZMAT storage, ADA bathrooms, and sprinkler/alarm upgrades. Due to the local government's lack of understanding of what is applicable to a manufacturing facility, we were asked to study codes applicable to hospitals, schools, and restaurants, resulted in further delays. The following is a timeline of the process:

- December 2009: First strategic discussion with key customers regarding prospects of building a factory in the U.S.
- January-March 2010:
  - Business planning and site selection.
  - Chairman David Wang and COO Dale Williams reviewed potential sites in Ontario, CA, which were convenient to the Port of Los Angeles and major distribution partners. I reviewed sites in central and coastal Maryland. A comparison of initial costs, recurring lease expenses, labor markets and ongoing overhead costs were conducted.
- March 2010:
  - Initial orders for production equipment placed with German vendors.
  - Consulted fluid systems engineers to design and specify wax storage and mixing systems.
- April 2010:
  - Lease was signed for Glen Burnie facility, a 120,000 ft^2 warehouse in Bay Meadow Industrial Park. The site chosen was a former warehouse for Reliable Liquors, which moved to a larger facility nearby. The facility was built in 1980 and permitted for use as warehouse/office

space only. The facility encompasses 20,000 ft^2 of finished office space and 100,000 ft^2 of warehouse space.

- Met with local Chamber of Commerce officials and County Economic Development officials to identify possible incentives and financial aid resources.
- Met with Anne Arundel County Department of Inspections, Licenses and Permits (AAC DILP) to discuss permitting process and applicable codes. AAC DILP provided little guidance; they simply referred PTI to consult the 2003 International Building Code, the ADA code applicable for change of use, and NFPA 101 Life Safety Code F1 for manufacturers. We were advised the county would require "upgrades to the fire safety systems including smoke curtains for the office area, sprinkler coverage and alarms" to reflect change of building use from manufacturing/warehouse to mixed use with manufacturing.

—• May 2010:

- PTI commissioned a commercial architect to begin the design and layout processes for tenant improvements on the proposed Glen Burnie site.
- Hired electrical, structural and mechanical engineers from the same firm to work with the architect on required upgrades.

• June 2010: Hired a General Contractor to coordinate architectural and engineering work and assist with code and permit issues.

• July 2010: Completed the first design for tenant improvements.

• August 2010:

- Filed first permit application on August 8.
- August 19 - first comment letter received, consisting of five pages and 30 action points. Key items included hazmat storage, fire safety plans, and HVAC for air exchange requirements
- First contractor quotes received at costs 50% above PTI initial estimates.
- PTI initiates a redesign with contractor to reduce costs and address hazmat storage and fire safety issues raised by AAC DILP.
- August 20 - Retained independent fire safety engineers and began investigation of fire safety and HAZMAT storage solution for redesign.

• September 2010:

- September 13 - Received feedback on fire code issues from fire engineers, began redesign of HAZMAT storage and HVAC system to address code compliance in the most cost-effective manner.
- September 28 - New permit application filed with revised plans for hazmat, fire safety, and HVAC.

• October 2010:

- October 18 - Permit received.
- October 25 - Construction begins.

- May 2011:
  - May 17 - Certificate of occupancy received from AAC inspector.
  - May 24 - First production begins.
- June 2011: Grand Opening

Since opening, the Chesapeake Bay Candle factory has gone from 17 employees to 80, and tripled production capacity. It is now one of the leading new job creators in Anne Arundel County, MD.

The company faces challenges in finding qualified employees. Most applicants lack sufficient skills or training. Basic reading, writing and arithmetic skills are often deficient and many are unable to follow instructions or function in a modern, collaborative production environment. To combat a 50% turnover rate in these jobs, additional incentives are being considered.

The local area also suffers from a lack of qualified mid-level supervisory talent, reflecting the absence of relevant vocational training and a vanishing ecosystem of other manufacturing companies.

Our recommendations to the Committee are as follows:

1. Create regional advisory offices within U.S. Department of Commerce or as an extension of the Small Business Administration to help small and mid-sized businesses navigate state, local and other regulatory requirements. Many investors may not know how to determine which states best fulfill their manufacturing and business needs, and a federal level review of each state will help speed up the selection process.

2. Through the same mechanism, guide companies to relevant incentives for tax breaks, financing, training and other programs whether sponsored by local, state or federal entities.

3. Provide a resource guide specific to new manufacturing ventures to help identify local suppliers, private developers, and other assets critical to start-ups.

4. At the state level, provide a one-stop concierge service to help new investors understand compliance issues and the procedures related to building a manufacturing facility so they can make more informed decisions.

5. Encourage local high schools and vocational colleges to provide gateway programs to internships and apprenticeships for local manufacturers to draw upon as sources for qualified talent.

6. Help educate Americans that we need to be a national that produces goods, rather than a nation that just purchases them. People should take pride in making things and the government should strive to eliminate the stigma associated with manufacturing jobs.

IPC MARKET RESEARCH

On-Shoring in the Electronics Industry: Trends and Outlook for North America 2013 Update

Published: September 2013

Association Connecting Electronics Industries

IPC

Free to Participating Companies

IPC Members: $225
Industry Rate: $450

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INTRODUCTION

Study Objectives

The mission of IPC is to support companies and people in the electronic interconnection industry worldwide through programs to enhance their competitive excellence and financial success. On-shoring (also called "reshoring") could have a significant impact on the future for the worldwide electronics industry.

While the off-shoring trend continues, as companies continue to seek low-cost locations for their manufacturing operations, there has been a growing awareness of the hidden costs and other liabilities associated with off-shoring, and of the operational and competitive advantages of manufacturing close to home. There is evidence that some companies may be adjusting their geographic strategies as a result of this awareness. Some companies are returning certain overseas operations to the Americas and creating new operations in their home regions. IPC confirmed and measured this trend with an on-shoring survey of the industry in 2012. A follow-up survey was conducted in the spring of 2013 to update its documentation of on-shoring activity. The goals of this research are to measure the trend, understand the drivers, and identify the impact on jobs and the industry.

Participants were asked about recent and planned relocation of overseas operations to the Americas, and new operations created or planned in the Americas. Some companies reported operations being returned or created in North America, but none cited Central or South America as a target region. Therefore, this study looks at the on-shoring trend as it affects North America (Canada, Mexico and USA).

The 2012 survey also asked electronics manufacturers about their sourcing trends and policies, to determine whether domestic sourcing is a parallel trend, and to understand the drivers of that trend. Those findings, first published in the 2012 report, are also included in this report.

In April 2013, IPC surveyed executives in all segments of the electronics industry in the Americas. Ninety-five companies responded, resulting in a total of 92 completed and validated surveys, and producing a representative survey sample. These 92 companies have an aggregate total of $50 billion in annual sales.

IPC and its members owe their thanks to the survey participants who expended time and effort to provide the data for this report.

More Information

This document is a product of IPC's market research service and is provided at no charge to the participating companies. The report is available to other IPC members for $225 and to non-members for $450. For more information about this report or other IPC market research services, please contact Ms. Sharon Starr, IPC director of market research at +1-847-597-2817 or sharonstarr@ipc.org, or visit IPC's website at www.ipc.org/industrydata.

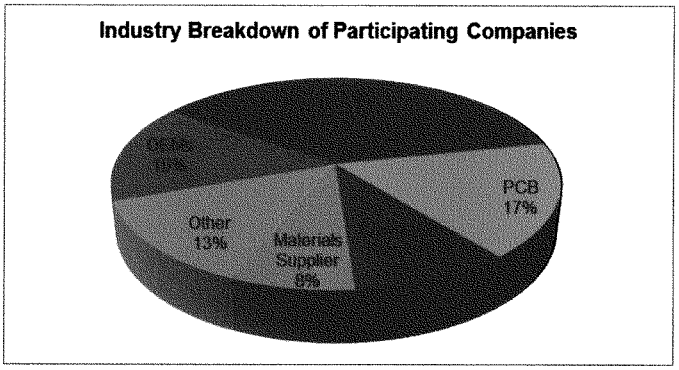
SECTION 1

Demographics

- Industry Segments of Participating Companies
- Size of Participating Companies
- Headquarters Locations of Participating Companies

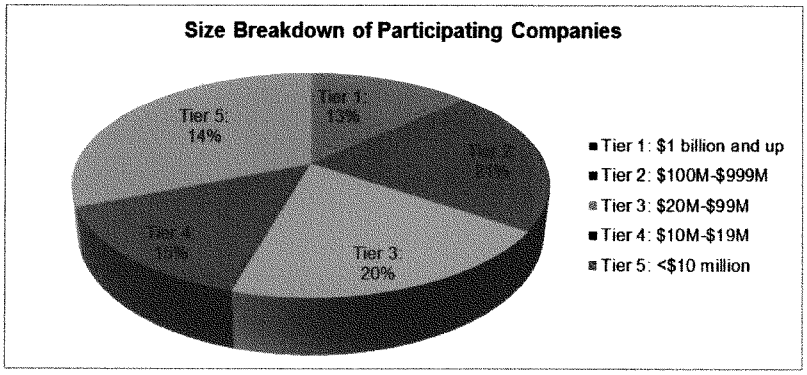
Industry Segments of Participating Companies

More than half of the participating companies are original equipment manufacturers (OEMs) or electronics manufacturing services (EMS) companies. PCB, equipment and materials suppliers are also represented, as well as other segments, which include distributors, engineering design and testing services, semiconductors, connectors, parts, printed electronics and consulting.



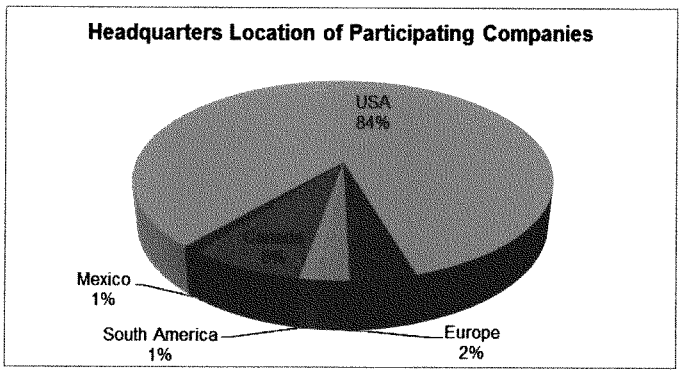
Size of Participating Companies

The sample is representative in terms of company size based on annual sales, as shown in the graph below. Participating companies ranged in size from less than $1 million in annual sales up to $15 billion.



Headquarters Locations of Participating Companies

Companies headquartered in the USA made up 84 percent of those participating.



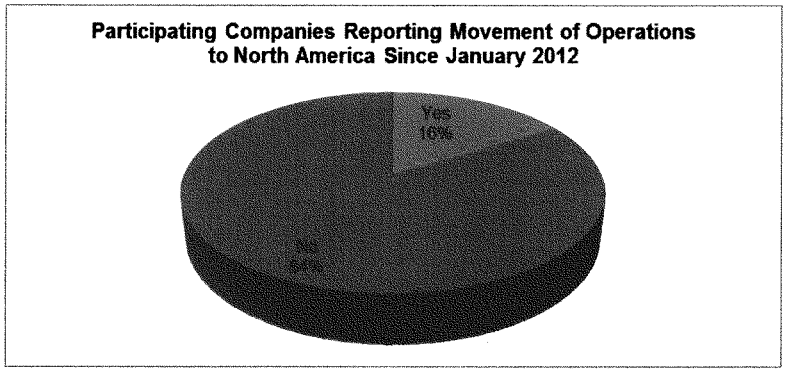
SECTION 2

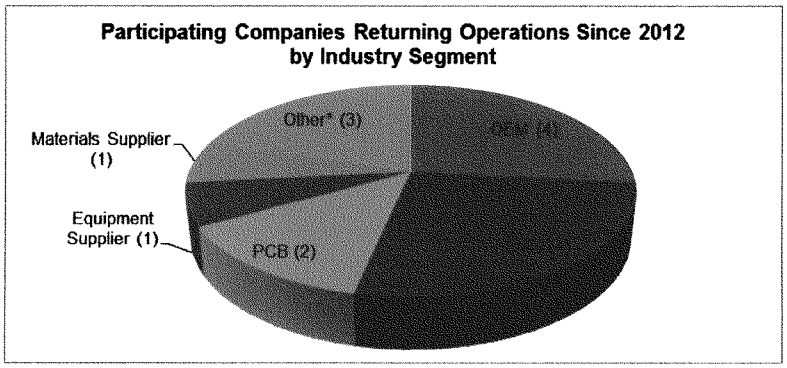
Overseas Operations Moved to North America Since 2012

- Operations Returned to North America by Industry Segment
- Types of Operations Returned and Where
- Value of Operations Returned to North America
- Jobs Created in North America by Responding Companies
- Drivers of Decisions to Return Operations to North America

Operations Returned to North America by Industry Segment

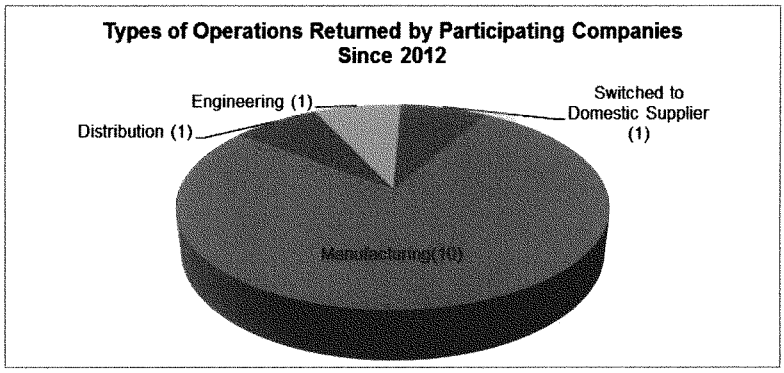
Fifteen (16 percent) of the responding companies reported having moved operations to the Americas from overseas since the beginning of 2012. They included OEMs, EMS companies, an equipment suppliers and a process consumables supplier. The three other types of companies were automotive, connector and engineering services suppliers.

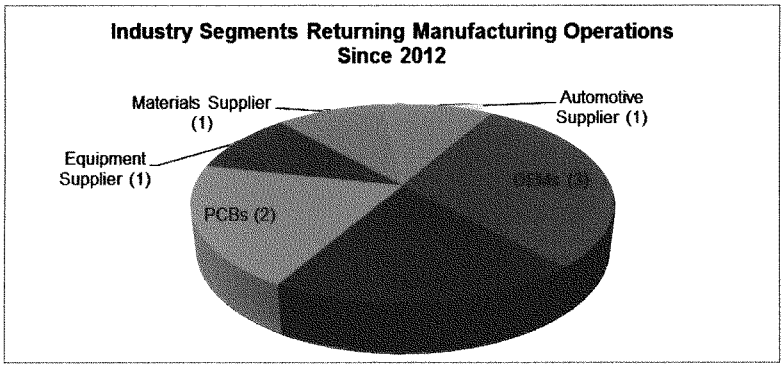




Types of Operations Returned and Where

Thirteen of the 15 respondents reporting on-shoring since 2012 provided details about the types of operations. Of those 13, 10 were manufacturing operations, one was a distribution center and one was an engineering office. One respondent cited switching from an overseas to a domestic supplier. The 10 manufacturing operations returned were in all segments of the industry. Most operations were moved from China to the USA.



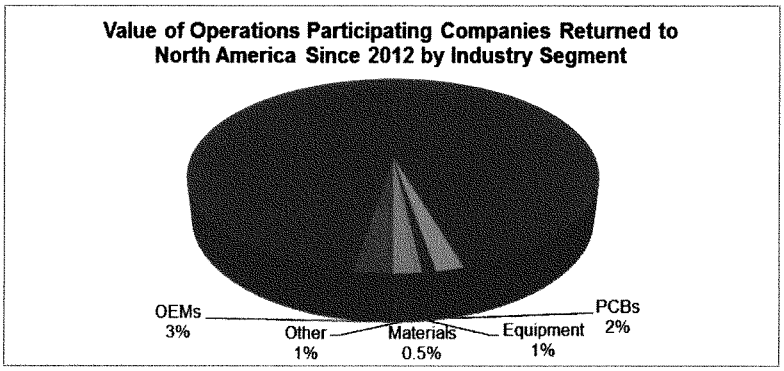


Types of Manufacturing Returned Since 2012	From	To
PCB fabrication (2)	China	USA
PCB assembly (3)	China	USA
Box build (EMS)	China	Mexico
Communications gear for IT applications (OEM)	Malaysia	USA
Universal power adapters (OEM)	China	USA
High-value consumables (equipment supplier)	China	USA
Solder products (solder supplier)	China	USA
Engineering design	China	Mexico, USA
Formed spring contacts (connector manufacturer that switched suppliers)	China	USA

Value of Operations Returned to North America

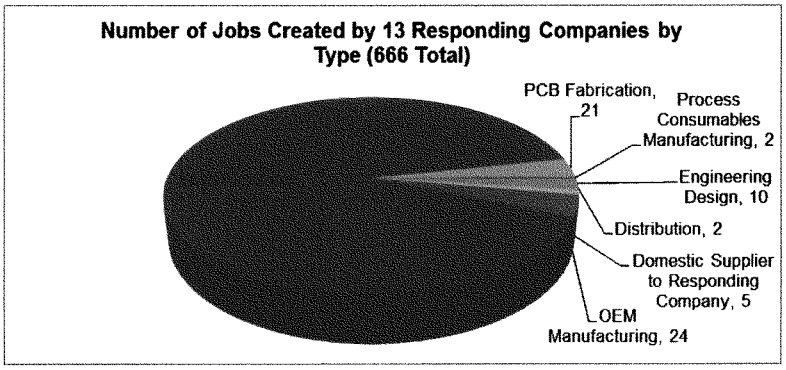
Of the 15 companies that reported movement of overseas operations to North America since 2012, 11 were able to provide the approximate percentage of their companies' global business that these operations represent. Among those 11 companies, the percent of their global business moved to North America ranged from 1 percent to 75 percent. The weighted average for these 11 companies was 4.9 percent of the companies' total value.

The value of the business moved from overseas to North America since 2012 by these 11 companies totaled $200 million, of which 93 percent was in the EMS segment.



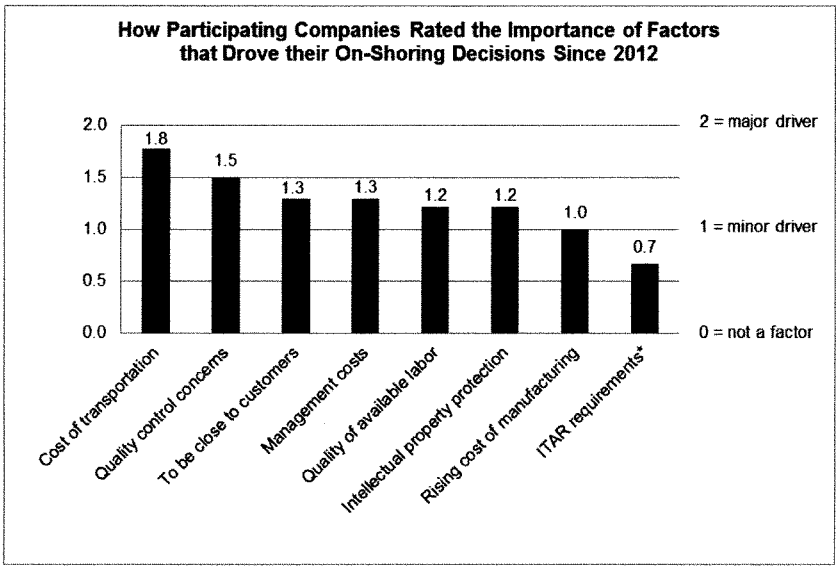
Jobs Created in North America by Responding Companies

The 11 reporting companies that were able to provide specific data about jobs created by operations returned from overseas since 2012 reported a total of 666 new jobs. EMS companies created 90 percent of these jobs.



Drivers of Decisions to Return Operations to North America

More than three quarters of participating companies that reported returning operations to North America since 2012 cited cost of transportation as a major driver of that decision. Sixty percent of these respondents cited quality control concerns, the need to be close to customers, and management costs as major drivers. Other drivers included quality of available labor, protection of intellectual property, the cost of manufacturing and ITAR (Department of Defense) requirements.



* The low composite score for ITAR requirements does not reflect its importance. The 3 respondents who are government contractors rated ITAR as a major driver; the other respondents said it was not a factor.

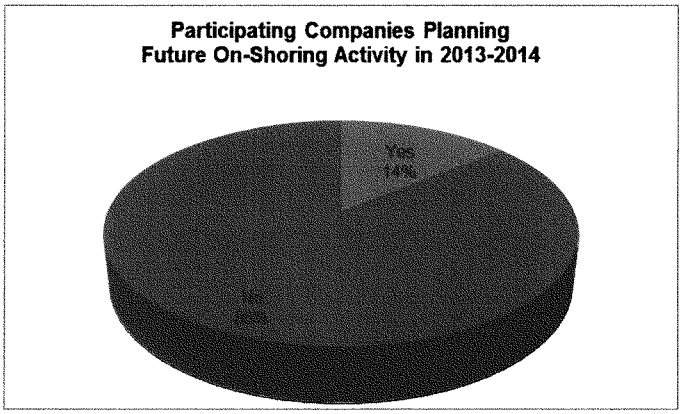
SECTION 3

New Operations Planned in North America Through 2014

- Operations to be Located in North America
- Types of Operations to be Created and Where
- Jobs to be Created in North America by Responding Companies
- Drivers of Decisions to Locate Operations in North America

Operations to be Located in North America

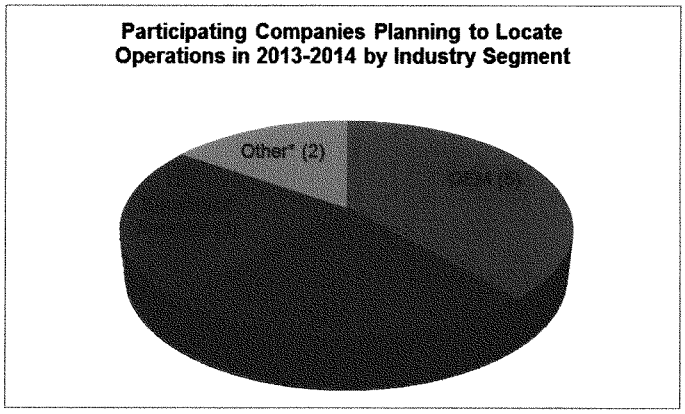
Thirteen (14 percent) of the participating companies reported that they expect to bring some operations back to North America from overseas, or create new operations in North America, by the end of 2014. Nine of them plan to relocate overseas operations to North America. Four of them are planning new operations in North America after worldwide locations were considered.

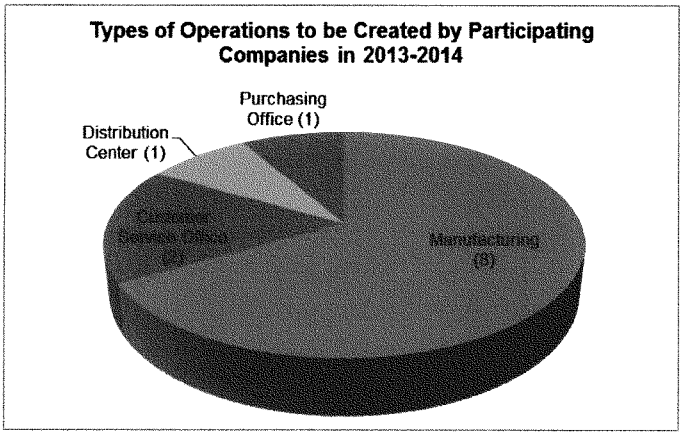


Of the nine companies planning to relocate overseas operations to North America, most were able to forecast the approximate percentage of their companies' global business that these returning operations represent. Among these seven companies, the aggregate value of the business they expect to move to North America by the end of 2014 is $135.75 million, which is just under 1 percent of the companies' global value. By company, the percentages ranged from 3 percent to 75 percent.

Types of Operations to be Created and Where

New and returning operations are planned through 2014 by responding companies in most industry segments, including five OEMs, three EMS companies, three equipment suppliers and two others (an automotive parts supplier and an engineering design services company). Eight of these operations are manufacturing plants.





One OEM reporting new operations is actually planning to change its outsourcing of PCB assembly from an Asian to a North American EMS company. That company is counted in the top graph, but not in the bottom graph on this page.

Of the eight manufacturing operations to be located in North America by participating companies, four are being established by OEMs, two by EMS companies and two by equipment suppliers. Most operations to be relocated will come from China to the USA. Of the new operations planned by three respondents, all are planning to locate the operation in the USA. One large OEM is also planning a new facility in Mexico.

Industry Segment	Type of Operation	Type of Products to be Manufactured	To be Moved from...	To be Located in...
OEM	Manufacturing	Printed circuit boards	China	USA
OEM	Manufacturing	medical / commercial, power supplies	China	Mexico & India
OEM	Manufacturing	Communications gear for IT centers	Malaysia	USA
OEM	Manufacturing	Unspecified	New operation	USA & Mexico
EMS Company	Manufacturing	Electronic assemblies	Taiwan	Mexico & USA
EMS Company	Manufacturing, sales, customer service & distribution	Electronic assemblies	New operation	USA
EMS Company	Purchasing office	N/A	Canada	USA
Equipment Supplier	Manufacturing	Automated industrial equipment	China	USA
Equipment Supplier	Manufacturing	Unspecified	New operation	USA
Other Supplier	Engineering design servi	N/A	China	Unspecified

Jobs to be Created in North America by Responding Companies

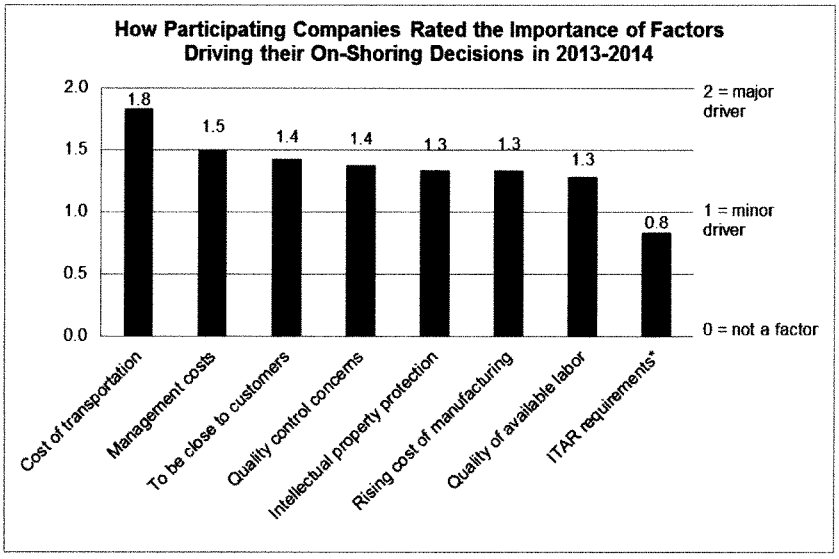
Eight of the reporting companies were able to forecast the number of jobs to be created within the new or returning operations due to on-shoring. They expect a total of 783 jobs to be created by the end of 2014. The planned OEM manufacturing operations account for 79 percent of these jobs.

Industry Segment	Type of Operation	Number of Jobs to be Created
4 OEMs	Manufacturing	622
Engineering Design Services	Customer Service Office	5
EMS company	Purchasing Office	6
EMS company	Manufacturing, sales, customer service & distribution	75
OEM	PCB assembly outsourcing	75
Total		783

One equipment manufacturer (not included in the table above) estimated the number of jobs created to be zero. This manufacturer hopes to utilize existing space and personnel in the USA rather than add to their costs in China.

Drivers of Decisions to Locate Operations in North America

The responding companies that expect to locate new or returning operations in North America by the end of 2014 rated the factors they believe will drive their companies' decisions about on-shoring. As seen in their ratings of decision drivers in the recent past, cost of transportation topped the list. Management costs came in second. Proximity to customers, quality control, intellectual property protection, cost of manufacturing, quality of labor, and ITAR were also important drivers.



* The low composite score for ITAR requirements does not reflect its importance. One respondent rated ITAR as a major driver and three rated it as a minor driver. The other respondents, presumably not government contractors, said it was not a factor.

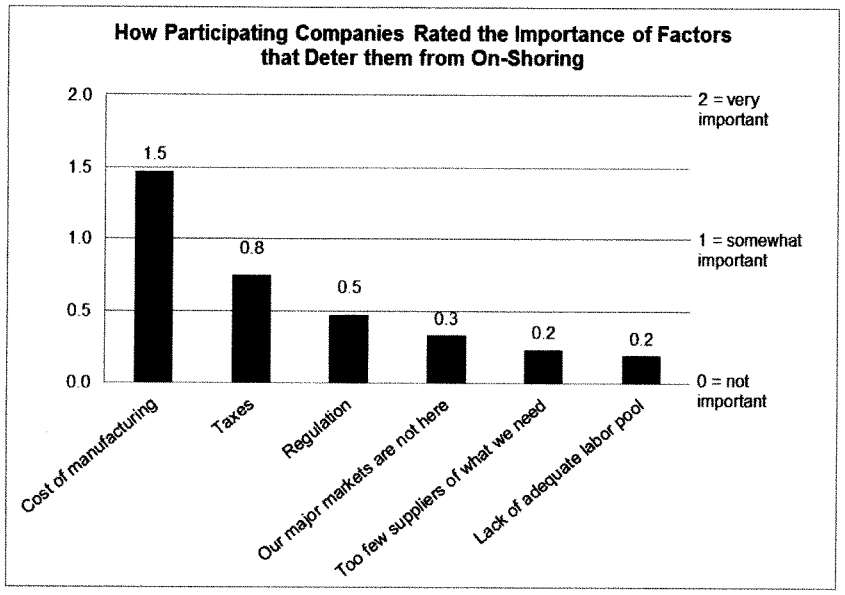
SECTION 4

On-Shoring: Deterrents, Drivers and Issues

- Deterrents to On-Shoring in North America
- Participants' Observations

Deterrents to On-Shoring in North America

The participating companies rated cost of manufacturing as by far the most influential deterrent to on-shoring in North America, followed by taxes, regulation, market focus, limited sources of supply and labor pool.



Participants' Observations

The survey participants in 2012 and 2013 had the following verbatim comments about on-shoring:

What is driving on-shoring

- We've tried to outsource all CCA manufacturing (either domestically or internationally), but quality, cost, delivery and loss of control has caused our management to reconsider our outsourcing strategy. Now we are re-investing in CCA equipment to renew and increase our internal manufacturing capability and capacity, and considering bringing back some products.
- We have been offshoring for the past few years as a cost saving initiative. Manufacturing has been effective. Engineering has not. Our CEO was replaced this week, due to poor financial results. The new CEO plans to re-evaluate all recent significant changes.
- (Our company) is 100% located in USA and we prefer to do more in USA.
- As an EMS, we are creating processes and developing a work environment that will address the triangle of quality often seen as an impossible dream. We are focused on providing to our customer quality, flexibility, on time delivery, and cost competitive pricing ... all this within Canada.
- All of our assembly business is in the US, but we have seen an increase in business with our customers coming back to the US from China mostly.
- More work coming back from overseas due to intellectual property issues.
- Recently our company has been looking to keep the majority of the manufacturing outsourced within the USA. We use local suppliers when possible.
- We are a small US-based EMS company that exclusively supports US-based customers and we plan to continue with this business model.
- We do not have, have never had nor are we contemplating any "off-shore" manufacturing.
- We only manufacture in USA. 20% of our revenue we ship to overseas.
- We only manufacture our products in the US. We considered manufacturing in Singapore a few years ago, but decided against it.

What is driving off-shoring

- Our direct end customers are still in China. So, bringing work back to U.S. is not logistically feasible.
- Only a portion of our costs have to do with electronics. Though we buy from domestic companies, many of them have moved their work overseas over the last decade. We have started in the last year to source more of our fabs overseas as the cost differential is now something our management wants to capture as opposed to keeping our business in the US. More of our end markets are now outside the US, so cost in all areas and in particular materials is starting to matter.
- I think our products that are in Asia are there to stay.
- Design is also moving to countries where growth markets exist.
- Can we find suppliers that can meet our price target?
- Market growth is expected to be outside the Americas and may drive certain operations to be closer to the end users, limiting growth of domestic operations.
- Some of the aerospace customers are moving to Asia.
- The major drivers for off-shoring are large volume products that can be sourced at a minimal cost.
- Mexico has attractive options but one major disadvantage is with the labor laws. They heavily favor the employee, and the bulk of the labor laws were written over 100 years ago and are in serious need of reform. It is very difficult to terminate an employee, even if underperforming, and many workers make a career out of manipulating the labor laws in their advantage. For example, to "fire" an employee, it can cost several thousand dollars to do this and as a result you have people who make a career out of getting fired. It is very possible for an employee to make a very good living simply by going from one company to another and getting fired. Also, it is required to pay huge annual Christmas bonuses each year. These "hidden expenses" can harm companies

who are unprepared and it is because of these we don't see Mexico growing as fast as it could be simply because of their antiquated labor laws.

- In bare PCBs, I see very little that would indicate a return to US manufacturing locations. For EMS providers, expectations for this trend to continue are much more realistic.
- We are moving more outside of the US to be closer to our main market. Labor costs are not the main driver- being close to our customer is the main driver.

General observations

- We build where we sell.
- The rate of offshoring still exceeds that of onshoring. Many OEMs still appear to offshore blindly or just based on a BOD level assumption it will be cheaper. Onshore CEMs are left to fill the gaps and often rescue failed attempts to offshore. This leaves the local CEM to provide a high cost solution instead of being allowed to compete on the low cost service from the beginning. There is not much mention of NA CEMs using real lean manufacturing to drive costs down. Would appreciate info on why that is, or if it's just not publicized.
- There are strong concerns that military technologies are being leaked to China through moving PWB fabrication to China. If this continues there will be no US suppliers of PWBs remaining since short term costs seems to be the only objective. There seems to be no concern for keeping technology in the US.
- America business will only come back as employers are not given loop holes for evasion and foreign markets are opened on an even scale.
- I have gone through out-sourcing twice before, once all of our jobs went to Singapore after the "Free" Trade Act was signed for Singapore in Feb 2003, then all of our work was sent to Mexico and China. No. We cannot keep killing the jobs here. The cost of living here is not what it is in Mexico or China or anywhere else for that matter. YES, BRING THE JOBS BACK TO US!!!!!!! Thank you.
- The EMS companies that we supply with US RF & microwave laminates & consumable products in China are seeing up to 60% decrease in business/orders mainly due to the global downturn. They export from China and are not allowed to supply the Chinese domestic market without first exporting to Hong Kong and then exporting back into the mainland - therefore, they are not competitive with Chinese companies who are allowed to sell domestically and issue an invoice in RMB. These EMS companies who export from China to the EU, Middle East & USA are worried about onshoring and actively searching for ways to counteract it.
- When a nut and bolt of the same size don't fit, you find out soon enough what to expect for cheap price. NA needs to develop technologies that make us work smarter, let THEM work harder. Whereas we say free market, THEY capitalize on this and STEAL the rug from under our feet helped by quarterly report generating CEOs who have short sightedness and concern themselves with their own bonus. America has GOT to get manufacturing back no matter what the price. A lot to be said about isolation. 'Ole Henry had it down pat.
- Currently, we do all of our manufacturing and production in the US. It seems as though this survey completely misses the case of manufacturers who are already local to the US.
- (Our company) has always been a US based manufacturer.
- We manufacture for world-wide distribution from one location in the USA. No off-shoring.
- A thoughtful study will reveal that not everything can be made overseas nor can everything be made in the US. Each project needs to be studied value add content, complexity, flexibility, IP protection issues, ease of management of the supply chain, proximity to design centers, traditional weight-value ratios, etc.
- Most requests for quote coming from Asia are for our Mexico operations.
- Relatively few on-shoring being done.
- I have not seen any tangible proof that on shoring is occurring yet.
- The USA lacks leadership at this point so most of us are taking a wait and see approach.
- It will be interesting to see if the discussion is real or an urban myth.

SECTION 5

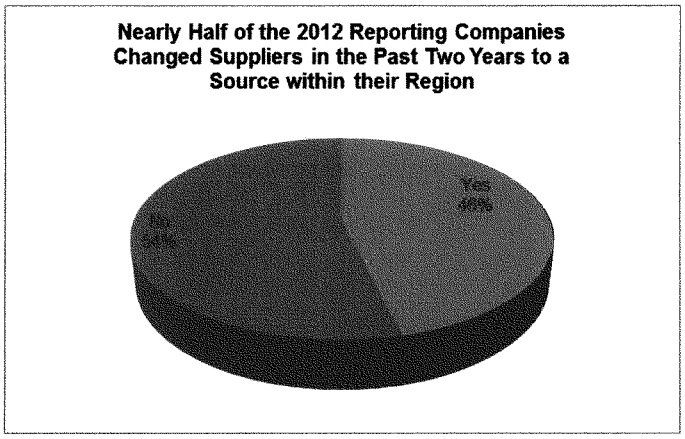
This section reports sourcing data from the 2012 on-shoring report, which is still current. The 2013 survey did not cover domestic sourcing.

Domestic Sourcing Trends

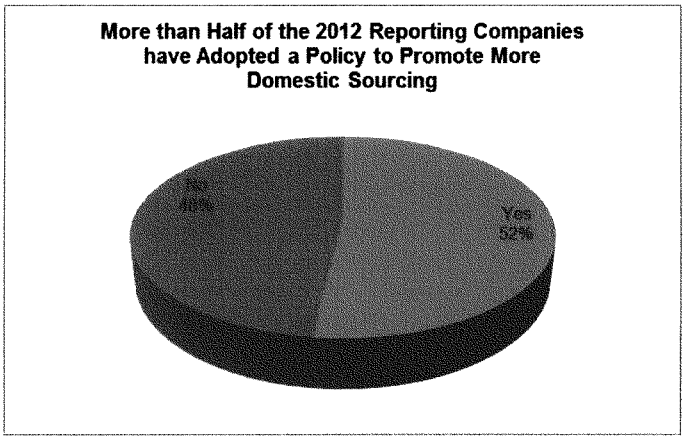
- Evidence of Domestic Sourcing Trend
- Industry Segments Sourcing Domestically
- Types of Products Being Sourced Domestically
- Drivers of Decisions to Source Domestically
- Participants' Comments about Sourcing
- Outsourcing and its Relationship with Off-Shoring

Evidence of Domestic Sourcing Trend

Of the 182 respondents in 2012 who knew whether their companies had changed suppliers in the previous two years to source from within their region, 46 percent reported that their companies did make such a change in sourcing.

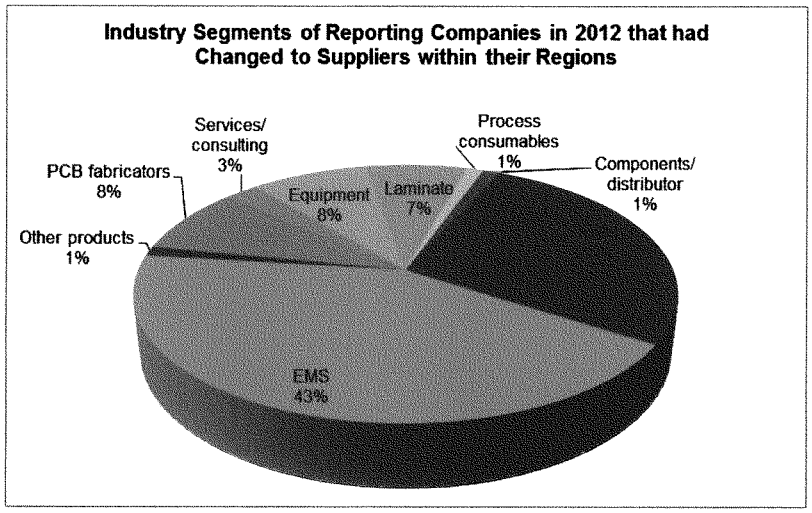


Of the 81 respondents who knew whether their companies had adopted a policy that encouraged more domestic sourcing, more than half reported that their companies have adopted such a policy.



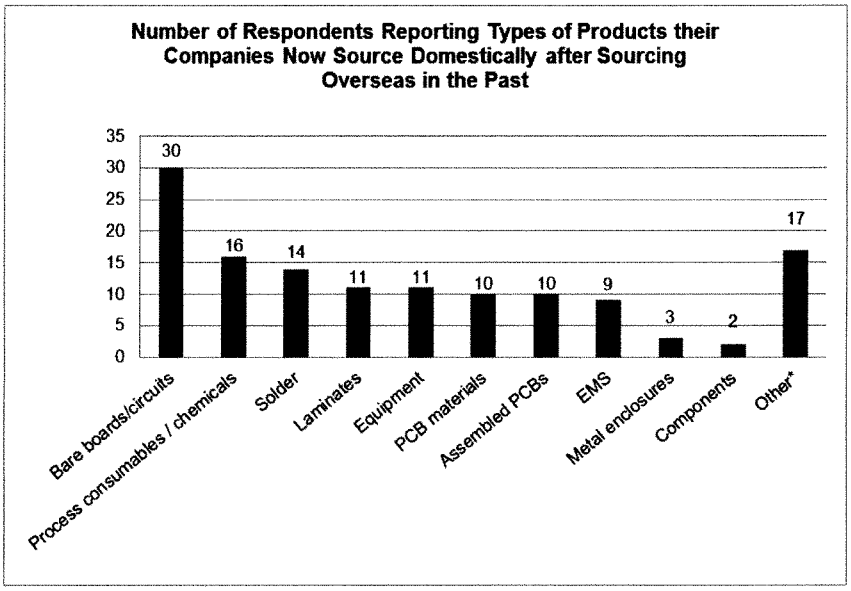
Industry Segments Sourcing Domestically

Of 84 responding companies that have changed suppliers in recent years to source domestically, 43% are EMS companies and 28 percent are OEMs.



Types of Products Being Sourced Domestically

Fifty-seven respondents in 2012 were able to identify products that were previously sourced overseas but are now sourced within their region. More than half of them cited bare boards/circuits. Several respondents cited process consumables/chemicals, solder, equipment, laminates and other PCB materials, assembled PCBs and EMS, metal enclosures and components.

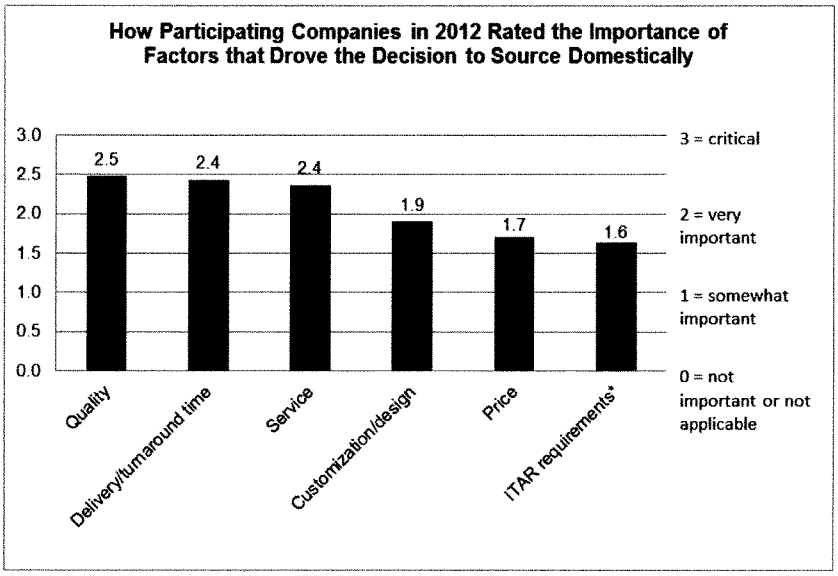


* Other products cited include:

- Stainless steel
- Molded plastics
- Services
- Fiber optics
- Raw materials
- Lead frames
- Electroplating services
- Some production inventory
- Cameras
- Glass calibration plates
- Coax wire
- Molded plastic parts
- Battery packs
- Machine parts
- Precious metal pastes

Drivers of Decisions to Source Domestically

The companies that reported changing to domestic sources of supply rated quality, delivery or turnaround time, and service as the primary factors driving these decisions. They also assigned importance to the need for customization or supplier involvement in the design process, price and ITAR requirements for U.S. military suppliers.



* Most respondents rated the importance of ITAR requirements for the U.S. defense industry as either "critical" (3) or "not important" (0). Their answers clearly reflect their markets and whether they serve the defense industry or not. Eliminating those who rated it "not important" produced a score of 2.5 for those to whom it is relevant.

Participants' Comments about Sourcing

Verbatim comments from participants in 2012

- Outsourcing is based upon financial returns, not on the quality of the product. Purchasing simply chooses a new shop based upon quotes, and who was the least expensive and that is it.
- We buy components from suppliers all over the world. The primary requirement is High Rel.
- Predict moving some suppliers back to the region in the next years.
- We are all in for manufacturing in the U.S. We purchase domestic materials whenever possible.
- We have had some customers return to buying in the USA in the last year due to issues with IP and quality issues from China.

Outsourcing and its Relationship with Off-Shoring

The birth and subsequent success of the EMS industry and other contract manufacturing signaled the trend away from vertical integration in the 1980s and beyond. The drivers were sound business principles, including the recognition that profitability can be enhanced by minimizing fixed costs and focusing on core competencies.

Many OEMs in the electronics industry found that outsourcing was a faster and more cost-effective way of moving production to low-cost locations than building or acquiring their own factories overseas. But many OEMs in North America have opted to outsource domestically, especially where OEM designers need to work closely with the design and production staff at vendor companies, and where turnaround time can be critical.

Due to recent supply chain disruptions and shortages, some companies have acquired other companies in their supply chains. In reporting on these developments, the industry press has raised the possibility of a new trend back toward vertical integration. While this activity is notable, it is evident in relatively few cases and cannot be considered a trend, especially given the temporary nature of the main drivers.

Appliance Magazine reported on July 31, 2012, the results of a new Design-2-Part Survey in which 42 percent of the responding U.S. OEMs indicated that they expect to do more outsourcing in the next year than in the past year. This percentage was up from the past two years' surveys. The survey found that 42 percent of the companies to which the respondents outsource are local vendors (within 100 miles of the OEM), 39 percent are regional or national, and 20 percent are outside the USA. More than half of the respondents who use local vendors said their primary reason for using them is for hands-on access and vendor visits. Those who use international vendors were asked about the primary supply chain risks of international outsourcing. Half cited risks in delivery time and nearly one-third cited vendor stability. The survey also found that the most common reasons for outsourcing domestically are:

- Superior quality
- Better communication and supervision
- Reliable delivery
- Shorter production runs
- "Made in America" pride

SECTION 6

Conclusions

- Anecdotal Evidence of On-Shoring
- Closing the Cost Gap
- The Way Forward for North America
- Resources for Companies Contemplating On-Shoring

Anecdotal Evidence of On-Shoring

Apple announced in December 2012 that it planned to establish new operations for production of their Mac computers in the USA. During a Senate hearing in May this year Apple CEO Tim Cook stated that "the product will be assembled in Texas, including components made in Illinois and Florida, and rely on equipment produced in Kentucky and Michigan," implying that some parts and equipment may be coming from off-shore as well. Foxconn, Apple's top subcontractor, recently opened a manufacturing facility in Texas, presumably to handle the production of Apple's US-made PCs.

Motorola Mobility, now owned by Google, has set up a factory to manufacture its new smart phone, the Moto X, near Fort Worth, Texas. In partnership with Flextronics, the company took over a former Nokia factory, which had been out of use for the past 15 years, with plans to hire around 2,000 workers. The phones are now being assembled at the plant in Texas with components from all over the world. According to a Reuters article on September 10, 2013, the facility is now shipping 100,000 Moto X phones per week. It reported that labor costs at the Texas facility are about three times the cost of labor in China. It is clear, however, that Motorola factored in other costs and strategic imperatives in making this decision. When the new operation was announced in May of this year, a Motorola executive said the Texas location would allow the company to "fix things faster (and) innovate faster." Motorola was one of the pioneers in moving U.S. production to China in the 1990s.

In June of this year, China-based Lenovo, the world's second-largest maker of personal computers, opened its first U.S. PC production facility in North Carolina. The facility also houses logistics, customer solutions and national returns centers. One driver of the decision to locate this operation in the USA was the need to provide specialized services that its North American customers value.

After decades of off-shoring, General Electric has also started moving some production back to its home turf. In February 2012, GE opened the first new assembly line at its huge and largely unused Appliance Park in Louisville, Kentucky, in 55 years. The new line is now making cutting-edge, energy-efficient water heaters that had previously been made by a contract manufacturer in China. By having manufacturing and design staff working together, the team redesigned the water heater, resulting in lower material and labor costs and improved quality. It was cheaper to produce in the USA and GE was even able to lower the price of the US-made heater by 20 percent. Time to market improved dramatically, with factory-to-warehouse time reduced from 5 weeks to 30 minutes. The following month, GE opened another new line at the same facility to make high-end refrigerators that used to be made in Mexico. New lines for dishwashers, clothes washers, dryers and plastic parts followed. Writing in the Harvard Business Review, GE's CEO, Jeffrey Immelt, said that outsourcing combined with off-shoring is "quickly becoming mostly outdated as a business model for GE Appliances."

The automotive industry is also doing some on-shoring. A 2012 article in the *Detroit Free Press* quoted Toyota Motor Sales chief Jim Lentz as saying Toyota "already makes around 70 percent of the models sold in North America in the region." He said Toyota "will continue to build core vehicles in North America as a hedge against currency fluctuation and consider moving more niche vehicles here from Japan if the volume is high enough." The article claimed that, in the previous eight months, Toyota had added or announced 3,500 new jobs and investment of $1.6 billion in North America.

A 2012 survey by the MIT Forum for Supply Chain Innovation found that one-third of U.S. manufacturers were considering bringing manufacturing back to the USA, and 15 percent said they are committed to implementing on-shoring activities. Reducing time to market and controlling costs were the two main drivers of the decision for these companies.

Closing the Cost Gap

Dramatic increases in wages for Chinese workers in recent years are making production in China less cost-effective. In recent years, average wages in China have risen 15 to 20 percent per year, and the minimum wage is set to rise at least 13 percent per year for the next five years. Factor in rates of productivity, which are significantly higher in the USA than in most other countries, and the cost gap narrows even more.

According to a January 2013 article in *The Economist*, "As the gap in worldwide wage rates narrows further, it will become more obvious that other factors, such as skills, labor law, clusters of industries, infrastructure, tax and regulation are playing an ever more important role when companies decide where to put their production."

Off-shoring is occurring rapidly in Japan. While China is a popular location for Japanese-owned production facilities, many Japanese companies are now building PCB factories in Vietnam.

New research by Bank of America Merrill Lynch this spring revealed that average hourly wages in Mexico are now almost 20 percent lower than in China. Mexico's strong population growth and its young and growing labor market are putting downward pressure on wages that, according to the bank's economist Carlos Capistran, will enable Mexico to main that competitive advantage for at least five years. Forecasts by the International Labor Organization predict that Mexico's economically active population will grow by 20 percent from 2010 to 2020, compared to a 2.9 percent increase in China's economically active population over the same period. "Mexico's wages as a proportion of economic output are lower than those in Indonesia, the Philippines, Thailand, South Korea, Hungary, Poland and Brazil, where labor costs have risen dramatically," according to an April 3, 2013, Reuters article.

EMS production in Mexico has grown dramatically in recent years, partially as a result of operations moved from Asia. There has been little evidence of a trend toward movement of low-cost production from Asia to South America, however. None of the participants in IPC's on-shoring surveys reported any past or planned movement of production to South America.

Harry Moser, founder of the Reshoring Initiative, which helps companies assess where to make their products, was cited in *The Atlantic* magazine in late 2012 for the belief that about a quarter of what is made outside the USA could be made more profitably at home.

The Way Forward for North America

One strategy that is driving some on-shoring decisions is to manufacture products near the markets they are specifically designed to serve. In a keynote speech at the May 2013 Electronic Distribution Show, Sanmina-SCI's Executive Vice President of Business Development and Marketing, Dennis Young, said this strategy could have the biggest potential impact in the USA.

Companies with a high stake in the quality (and perceived quality) of their products may find that manufacturing close to home is worth the additional cost. This also applies to companies that need to modify and fix products, and to implement product innovations quickly, like Motorola at its new facility in Texas.

Many companies see the benefits of having all functions, from product design to production, in one location or at least in close proximity. A manufacturer in the U.K. was quoted in the *Financial Times* as saying, "In our experience, the benefits of local manufacturing outweigh any cost savings that might exist. Staff become more emotionally involved with products when they can see them evolve from an engineer's idea, through manufacture to dispatch. It breeds a dedication and pride in what we do that adds to the quality of service we provide. This, in turn, generates an increased loyalty and trust from our clients." GE's "big room" concept for integrating design and manufacturing at its plants in Kentucky has paid off in similar ways, and also has dramatically reduced its time to market.

Even a purely cost-focused strategy can lead to on-shoring decisions. The higher productivity of U.S. workers greatly reduces the net cost differential between manufacturing in China versus the USA. Other hidden costs can also be substantial. A representative of the National Outsourcing Association in the U.K. was quote in the *Financial Times* as saying "The reality is that not all goods can be produced more cheaply in low labour-cost locations. While labour might come cheaper, components may be more costly. So-called 'cheaper destinations' can be riddled with hidden costs." Constant changes occurring in wages rates, energy prices and the supply chain require regular re-evaluation of off-shoring decisions. Another manufacturer quoted in the same article stated, "What represents a low-cost manufacturing region one year can quickly become uncompetitive. You have to continually examine your options and take a very commercial approach to protect your customers from rising input prices."

Electronics industry executives participating in the panel discussion at IPC's APEX EXPO keynote session in February 2012 were asked whether business is moving back to North America from Asia. Comments indicated that the cost gap is narrowing, and most other low-cost countries lack the necessary infrastructure to support electronics industry production. They agreed that most high-volume production will not return to North America, but mid-volume production of high-technology products for the North American market is a good bet for the region.

A 2012 editorial in *Electronics Production World* cited statistics showing that the U.S. share of global manufacturing production value has not declined much – from 22 percent in 1980 to 20 percent in 2009 – but the type of production has changed from low-price consumer goods to big-ticket items for high-technology industries such as medical, military and aerospace. China is gearing up to compete in this high-value space and North America must strengthen its advantages to keep its share of the market. Staying on the cutting edge of innovation, technology, engineering, science and research is North America's key to maintaining competitive strength.

Resources for Companies Contemplating On-Shoring

The non-profit "Reshoring Initiative" (www.reshorenow.com) provides a free total-cost-of-ownership (TCO) estimation tool. Using the TCO Estimator helps companies quantify the hidden costs in off-shoring and calculate the real impact on their profit and loss results. Given the ever-changing cost equation, currency fluctuations and the uncertainty in global supply chains, this organization advises companies to perform this calculation and re-evaluate their off-shoring strategies periodically.

In the 4th quarter of 2013, IPC will publish a new study on geographic trends in electronics manufacturing. It will serve as an electronics manufacturer's guide to the world, with facts and figures needed to assess manufacturing locations worldwide. For more information, please contact MarketResearch@ipc.org.

APPENDICES

- Survey Questionnaire
- Current IPC Market Research Studies and Reports

On-Shoring Update 2013

Instructions

This is an IPC "fast facts" survey intended to update the electronics industry about on-shoring activity in the Americas. Your company must be an electronics manufacturer or supplier to participate.

Please complete your survey by Friday, April 12, 2013. As a participant, you will be eligible to receive the complete report on the findings at no cost. Please contact Ms. Sharon Starr, IPC's director of market research, 1-847-597-2817 or sharonstarr@ipc.org with any questions.

Thank you for this important contribution to your industry!

Demographics

***1. What is your company's primary industry? (Select one)**

- ◯ Electronic end-products / OEM
- ◯ EMS company / contract electronics manufacturer
- ◯ PCB fabricator
- ◯ Supplier of laminate
- ◯ Supplier of process consumables / chemicals / coatings
- ◯ Supplier of electronics manufacturing/assembly equipment
- ◯ Other (please specify)

***2. Approximately what was your company's global revenue in U.S. dollars ($) in 2012?**

***3. In what country is your company headquartered?**

- ◯ USA
- ◯ Canada
- ◯ Mexico
- ◯ Other (please specify)

Relocation of Operations

On-Shoring Update 2013

***4. Has your company moved any of its existing operations from overseas to the Americas since the beginning of 2012?**

- ◯ Yes
- ◯ No

Relocation of Operations

5. Approximately what percent (%) of your current global business does the relocated operation represent? (Please enter percentage as a whole number, e.g., 50, instead of 50% or .5)

6. Approximately how many jobs does this operation represent?

7. What type of operation did your company move to the Americas? (Select all that apply)

- ☐ Manufacturing
- ☐ Sales office
- ☐ Customer service office
- ☐ Distribution facility
- ☐ Other (please specify)

Relocation of Operations

8. What types of products are manufactured at the facility that was moved to the Americas?

Relocation of Operations

9. From what country was this operation moved?

On-Shoring Update 2013

10. To what country was this operation moved?

- [ ] Canada
- [ ] Mexico
- [ ] USA
- [ ] Other (please specify)

11. Please rate the importance of the following factors in your company's decision to move this operation to the Americas.

	1 (major driver)	2 (minor driver)	3 (not a factor)
Rising cost of manufacturing (labor, etc.)	○	○	○
Cost of transportation	○	○	○
Management costs (travel, time, etc.)	○	○	○
Quality control concerns	○	○	○
Intellectual property protection	○	○	○
To be closer to customers	○	○	○
ITAR requirements (for U.S. defense contractors)	○	○	○
Quality of available labor	○	○	○
Other	○	○	○

Please specify other factor

Future/Planned Relocation of Operations

***12. Does your company have plans to move existing operations to the Americas this year or in 2014?**

- ○ Yes
- ○ No

Future/Planned Relocation of Operations

13. Approximately what percent (%) of your current global business does this operation represent? (Please enter whole numbers, e.g., 50, instead of 50% or .5)

On-Shoring Update 2013

14. Approximately how many jobs will this operation represent?

15. What type of operation does your company plan to relocate to the Americas? (Select all that apply)

- [ ] Manufacturing
- [ ] Sales office
- [ ] Customer service office
- [ ] Distribution facility
- [ ] Other (please specify)

Future/Planned Relocation of Operations

16. What types of products will be manufactured at this facility?

Future/Planned Relocation of Operations

17. From what country will this operation be moved?

18. To what countries do you expect this operation to be moved? (If the destination is not yet known, you may list up to 3 countries under serious consideration.)

a.

b.

c.

On-Shoring Update 2013

19. Please rate the importance of the following factors that will drive your company's decision about where to relocate this operation.

	1 (major driver)	2 (minor driver)	3 (not a factor)
Cost of manufacturing (labor, etc.)	◯	◯	◯
Cost of transportation	◯	◯	◯
Management costs (travel, time, etc.)	◯	◯	◯
Quality control concerns	◯	◯	◯
Intellectual property protection	◯	◯	◯
Need to be close to customers	◯	◯	◯
ITAR requirements (for U.S. defense contractors)	◯	◯	◯
Quality of available labor	◯	◯	◯
Other	◯	◯	◯

Please specify other factor

New Operations

***20. Is your company locating any NEW operations in the Americas for which overseas locations were considered?**

◯ Yes

◯ No

New Operations

21. Approximately how many jobs will these new operations create?

22. What types of new operations are these?

☐ Manufacturing

☐ Sales office

☐ Customer Service office

☐ Distribution facility

☐ Other (please specify)

On-Shoring Update 2013

23. What countries in the Americas is your company considering as locations for these new operations?

a.

b.

c.

24. What is the primary factor in your company's decision to locate these new operations in the Americas?

- ◯ Cost of manufacturing (labor, etc.)
- ◯ Cost of transportation
- ◯ Management costs (travel, time, etc.)
- ◯ Quality control concerns
- ◯ Intellectual property protection
- ◯ To be close to customers
- ◯ ITAR requirements (for U.S. defense contractors)
- ◯ Quality of available labor
- ◯ Other

Please specify other

***25. Please rate the importance of the following factors as DETERRENTS to locating your company's operations in the Americas.**

	1 critical	2 very important	3 somewhat important	Not important / not applicable
Cost of manufacturing (labor, etc.)	◯	◯	◯	◯
Regulation	◯	◯	◯	◯
Taxes	◯	◯	◯	◯
Lack of adequate labor pool	◯	◯	◯	◯
Our major markets are not here	◯	◯	◯	◯
Too few suppliers of what we need	◯	◯	◯	◯
Other	◯	◯	◯	◯

Please specify other

On-Shoring Update 2013

26. Are you willing to share more about your company's on-shoring experience?

- [ ] We would consider being the subject of an on-shoring case study prepared by IPC
- [ ] Someone from my company might be willing to speak about my our on-shoring experience at an IPC conference

If you might be willing to discuss your company's experience, please provide your company name and your contact information.

27. Any other comments you wish to make.

28. Please provide your email address if you would like to receive the complete report on the results of this survey.

Current IPC Market Research Studies and Reports

	Publication Date	Next Edition Due	IPC Member Price	Standard Price
Subscription Services				
Electronics Supply Chain Quarterly - NEW	Quarterly	November 2013	$450/year	$600/year
IPC North American PCB Market Report	Monthly	October 2013	$600/year	$1,200/year
IPC North American EMS Market Report	Monthly	October 2013	$350/year	$700/year
IPC Global EMS Business Report	Quarterly	September 2013	$1,000/year	$2,000/year
Market Studies				
World PCB Production Report for the Year 2012 - NEW	August 2013	Summer 2014	$250	$975
WECC Global PCB Production Report for 2012 - NEW	August 2013	Summer 2014	Free	Not for sale
Analysis and Forecast for the PCB Industry in North America 2012-2013 - NEW*	July 2013	Summer 2014	$450	$900
Analysis and Forecast for the Electronics Manufacturing Services (EMS) Industry 2011-2012 - Reduced Price*	October 2012	September 2013	$300	$600
PCB Technology Trends - Reduced Price*	April 2012	Q2 2014	$450	$900
The Electronics Industry in Latin America – Reduced Price	January 2013		$225	$450
Management Studies				
IPC Study of Quality Benchmarks for the Electronics Manufacturing Services (EMS) Industry for 2010 - NEW*	May 2013	May 2014	$675	$1,350
*On-Shoring in the Electronics Industry: Trends and Outlook for North America – 2013 Update**	September 2013		$225	$450
IPC Wage Rate & Salary Report for the North American EMS Industry 2008-2009 - Reduced Price*	January 2012	December 2013	$450	$900
IPC Executive Compensation Study for the North American Electronics Industry 2011-2012 - Reduced Price*	New in 2013		$675	$1,350

*These survey-based studies are free to companies that participated in the survey. For information about participation in IPC statistical programs, go to www.ipc.org/StatPrograms

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