

THE LIGHT AT THE END OF THE TUNNEL

AISTech 2012 President's Award Breakfast Keynote Address



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Commercial Metals Company
2012 AIST William T. Hogan, S.J. Lecture Awardee*

Pictured at left: 2011 AIST president R. Joseph Stratman (left) presents the AIST William T. Hogan, S.J. Lecture Award to Joseph Alvarado (right).

Joseph Alvarado spoke before a gathering of more than 1,100 people at the AISTech 2012 President's Award Breakfast in Atlanta, Ga., USA.



Thank you for that kind introduction, Joe. It is truly an honor for me to accept this award and to be asked to address this dynamic group of steelmakers. I congratulate all of the distinguished award recipients today for their contributions in advancing our industry through research and technology improvements. Without their leadership and innovation, our industry would not be "world class and world competitive" as it is today.

This morning I will take you on a journey in time to look at the economic cycles starting in the early 1900s and how the steel industry has emerged out of each cycle even stronger with new technologies and efficiencies.

But before I get started, I would like to pause and reflect on the late Father Hogan.

Father Hogan was a man whose name was synonymous with steel. He was an icon in the industry. In many ways he was an industry spokesman and often the face of the industry.

However, when I think of fathers, I think of my own father. My father moved from El Paso to East Chicago. He worked in the open hearth at Inland Steel for 30 years. He was a man of pride, dignity and hard work. His tools were a shovel, a strong back, a sharp eye and hustle. He was a man, like so many who proceed us, who built this industry.

As I am grateful to him for his leadership and work ethic, I am grateful to all of you, and to the many people like you and my father, who give us all so much to be proud of.



A LOOK BACK

As I look back at the history of steel production in the United States (Figure 1), I see an industry that is resilient, innovative and has overcome many obstacles along the way. Going back to the early 1900s, the industry, in its infancy, was just making its mark in the U.S. We had reached the 46-million-tons-per-year mark by 1920 and, just as we were gaining steam, the Great Depression set us back. Coming out of the Great Depression, the industry experienced a phenomenal 16% year-over-year growth rate over the next 12 years. This was a result of the appetite for steel created by economic growth during the Industrial Revolution, not unlike the economic growth experienced recently in China. During this period, the Bessemer and Siemens-Martin processes, developed earlier in the century, led to efficiencies and economies of scale as the industry grew to approximately 90 million tons of annual production in 1944.

In 1945, the industry experienced a huge setback as a result of a decline in government spending following World War II and the shift from a wartime to a peacetime economy. Following this brief downturn, the industry had a long 10-year run of production increases. This period of expansion produced an annual growth rate of 6.5% and reached a peak of 117 million tons in 1955. During this period, the development of the BOF steelmaking process led to a more efficient method of production and produced higher-quality steels.

The next growth period for steel production started in 1958 at 85 million tons and peaked in 1973 at 151 million tons (which is the most steel produced in a single year in the U.S.). This period could arguably be the most important from a technology improvement perspective. During this 16-year run, the industry produced more steel than any other growth period in its history. The technology developments of the era included the electric arc furnace, continuous casting and the beginning of environmental controls.

After a few years of moderate steel production declines as a result of stagflation caused by OPEC's oil price increases coupled with high government spending, steel

production was pushed to a low of 75 million tons following the 1973 oil crisis. This was our first reality check which signaled that we were operating in a global economy. Rising energy prices forced the steel industry to drastically reduce costs to remain competitive globally.

During the period from 1982 through 2000, we experienced industry consolidation and lost steel production capacity. Although the industry suffered setbacks during this period, it was these types of economic times that reminded us of how we had to change our structure and practices to remain globally competitive. This wake-up call forced us to address our industry's cost structure. High-cost facilities were closed, and our ability to reduce cost through new technology improved energy efficiency by 30%, through the use of more efficient EAFs, scrap preheating, and near-net-shape and thin-slab casting practices. Building on the previous cycle's technology, labor costs were reduced from 10 man-hours per ton to three during the same period as a result of new manufacturing technologies such as computer controls and process automation. This cycle produced the largest efficiency gains in the industry's history.

This brings us to the last of steel's economic growth cycles, 2000–2008. Although this was an expansion period for steel consumption as the economy thrived, U.S. crude steel production remained relatively flat — between 100 and 110 million tons per year — as we were challenged by imports and the emergence of global producers. This does not mean that we stood still. The industry experienced another round of consolidation, expanding the vertical integration model by back-integrating into raw materials and further into downstream steel consuming businesses.

Commercial Metals Company (CMC) was a pioneer in the vertically integrated model. My predecessors understood the need to have a consistent outlet for their scrap metal recycling business and supply for their established steel manufacturing, distribution and fabrication channels. Founded in 1915 as a metals recycler, CMC forward-integrated into steelmaking and downstream fabrication in 1963. Starting with a single mill in Seguin, Texas, and a small group of regional fabrication shops,

History of United States Crude Steel Production

U.S. Crude Steel Production

(000's ST, US\$5 & 415)

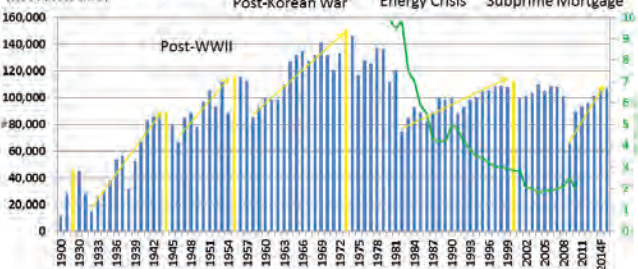


Figure 1



CMC Steel Arizona – April 2008



Figure 2

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today we now operate more than 200 recycling, steel-making, fabrication and distribution locations globally.

Through this period, the steel industry continued to push the envelope and increase productivity as well as reduce cost. Labor rates continued to decline and now stand at two man-hours per ton for the industry, with most mini-mills operating at less than one man-hour per ton. Through optimization and lean processes as a result of high-speed casting, real-time instrumentation and continuous operational feedback, we have continued to improve our productivity to be a global leader in low-cost, high-quality steel production.

CMC STEEL ARIZONA – THE MICRO-MILL

Since this is a steel technology conference, I would be remiss if I didn't take a few minutes to discuss our new mill in Arizona (Figure 2). Pardon me if I'm not too technical; I'll leave that to the engineers, like Kolin Keller, CMC Arizona's vice president of operations support. But our new "micro-mill" is a great example of the latest technological advancements and the next generation of steelmaking. This new technology takes the mini-mill to a new level, hence the name "micro-mill."

This is a project we worked on jointly with Danieli. It was a wonderfully successful team effort. Danieli provided equipment, technology and support, but in the end we succeeded thanks to the effort and sacrifice of all the men and women of CMC for taking this project from concept to reality, especially the team in Arizona, who spent many long days in the 118°F weather. Even though I've been told it is "dry" heat, 118° on any scale is hot. As an aside, I am pleased to be here, but had to question the sanity of the AIST Globe-Trotters last year when they decided to tour our Arizona mill in August.

Our engineering and construction team did an excellent job of design and construction of the facility. In April 2008, we broke ground in the desert of Arizona, and within 12 months we had the infrastructure and facilities in place and were installing equipment (Figure 3).

By 9 September 2009, we were melting steel (Figure 4) — 18 months from the first bucket of dirt mixed with a lot of desert sand, to the first ladle of steel. No small feat!

Once again, with all due credit to my predecessors, it took nerves of "steel rebar" to build a mill when the industry is running at less than 50% capacity utilization. Talk about no light at the end of the tunnel! That is what we were facing in the start-up of the micro-mill. The strategy was to build a product-focused mill that was compact, energy-efficient and high-yield to supply regionally underserved markets. The 300,000 tpy capacity mill was designed to produce rebar, light shapes and small merchants. If you are not familiar with the micro-mill concept, in simplest terms it utilizes a continuous-continuous technology that produces a single uninterrupted strand from caster to finishing. In other words, we are 100% hot charged and there are no buffer zones. The casting speeds have to be matched exactly with the speed of the rolling mill. It may sound impossible, but this technology produces nearly 100% material yield. To date, our record for the length of a continuous billet is 32,736 feet — or to put it into perspective, 6.2 miles!

In spite of the difficult market conditions that existed when we commissioned the mill, we achieved nameplate capacity production as well as profitability within one year of operation. My hat is off to the CMC Arizona

CMC Steel Arizona - April 2009



Figure 3

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CMC Steel Arizona – 9 September 2009



Figure 4

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C&I Credit Availability

Commercial Lending Standards

(% Improving, Quarterly, Federal Reserve Board)

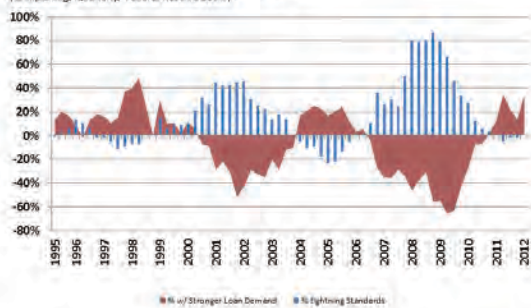


Figure 5

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team, then led by Steve Henderson, that made this monumental achievement. We are all proud of this accomplishment. It is that level of commitment and drive for continuous improvement that has brought our industry to where it is today. I'm sure that each of you could tell similar stories about your own facilities and your own company.

OUTLOOK

Now if I can change directions, I'd like to turn your attention from our micro-mill and our history to the present and then the future. We have just experienced one of the worst recessions since the early 1900s, but the light at the end of the tunnel is getting brighter. And, no, it isn't a freight train headed our way, though sometimes it feels that way. I believe we all remember what life was like in September 2008 and the implications it had on our industry. After an unprecedented "ride," overnight the phone stopped ringing and new orders disappeared. We went immediately from full order books and well-planned 13-week rolling cycles to working from hand to mouth and three- to four-week cycles. We all know what that does to mill productivity and profitability. As the financial markets collapsed, credit markets seized and

the demand for steel dropped by 40%, we idled excess capacity, but not quickly enough. Revisiting Figure 1, in 2009, crude steel production dropped to levels that we had not experienced since 1946. The industry's profitability was rattled by the financial collapse that has impeded market growth for the last three years.

Leaving the past behind, but building on the technology improvements the industry has achieved in each of the previous economic cycles, we will emerge stronger and prepared for a brighter future.

As we look at the current economic conditions, they are nowhere near the record levels we experienced in 2006–2008, but leading indicators are suggesting a brighter future is on the horizon. Are there signs that a full recovery is nearing? Let's look at a few indicators that are crucial to a recovery and see what they are telling us.

COMMERCIAL AND INDUSTRIAL CREDIT

The commercial and industrial credit markets were starting to tighten as far back as late 2006, but as shown by the graph in Figure 5, completely seized in late 2008 through late 2010. More than 80% of lending institutions reported tightening of lending standards, while more than 60% of loan officers reported decreasing loan demand. The bright spot is that loan demand started improving in early 2011 and lending standards have begun to relax. As banks continue to gain confidence and relax lending standards, this will provide the economy the capital necessary for growth. Certainly it's never fast or soon enough, but this is an encouraging sign.

The Architectural Billings Index (ABI) tracks the billing rate that architects have for designing construction projects. A number above 50 indicates that their business is improving. Commercial construction correlates closely with the billings index with a general lag time of eight to 12 months before we will see projects out for bid. While we are on a five-month run of the ABI above 50, today I want to look at the Architectural Inquiries Index. The Inquiries Index tracks inquiries that architects have for design services for new construction. In

Pent-Up Demand

ABI National Inquiries Index

(Index, monthly, values >50 indicate increase in inquiries)

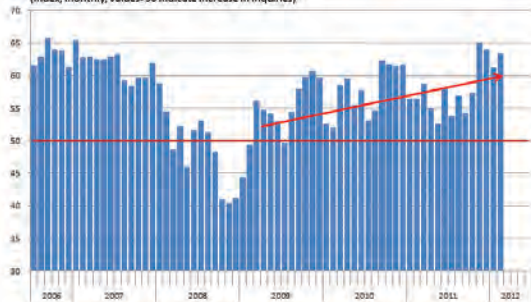


Figure 6

Central Region Sales Meeting
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Financial Market Stability



Figure 7

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Economic Growth

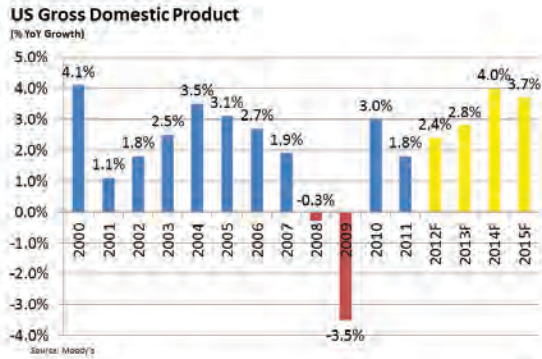


Figure 8

support of the increased loan demand, the Architectural Inquires Index is improving and is back to pre-recession levels (Figure 6). This indicates that developers and owners are inquiring to architects about their potential building plans and that there is pent-up demand for commercial construction. Another sign that the light is brightening.

THE FINANCIAL MARKETS

In late 2007, the Dow Jones Industrial Average peaked at 14,093 before a fall of 53% to 6,627 in early 2009. Although it has taken three years, the market recently closed above 13,000 for the first time since the recession (Figure 7). This indicates that companies are profitable and the market recognizes their real value based on the growth potential. As corporate America continues on the path of profitability with improved balance sheets, more cash is being generated for investment in growth. For companies that were holding cash throughout the recession for a rainy day, they are seeing enough confidence in the markets and taking money off the sidelines and investing for growth. Another signal that the light is continuing to get brighter.

ECONOMIC GROWTH

Although GDP is not a leading, but a lagging, indicator for steel consumption, the historical growth and forecasts are trending positive (Figure 8). The 3% growth in 2010 was primarily government spending as a result of the stimulus funding. The funds were appropriated and contracted in 2009, but took over two years to get to the end consumer projects. The positive takeaway is that the stimulus spending is no longer a contributing factor and the GDP is being supported by consumer and corporate spending. The third indication that the light is brightening.

JOB CREATION

Job creation is probably the most vital component to the economic recovery, but it's really a situation of which comes first, the chicken or the egg. Without jobs, consumer spending decreases. Without consumer spending, businesses aren't profitable and are reluctant to hire. When unemployment increases, housing starts decline, which ultimately leads to lower steel demand. During the most recent recession, the United States lost approximately 9 million jobs over a two-year period. To date, we have recovered about 3 million jobs during a subsequent two-year period (Figure 9). With a decline in government spending comes a decline in public-related jobs; however, the bright spot is that private employment has improved and is more than filling the gap. The level of job creation that the economy needs to sustain a recovery is approximately 200,000 per month. The most recent month aside, we have been oscillating around that level for about a year now. Another sign that we are on the path to recovery.

HOUSING STARTS

The last sector to look at is housing starts. Historically, housing starts have been a great leading indicator of economic strength and steel consumption. They normally correlate closely to many other indicators that drive steel

Job Creation

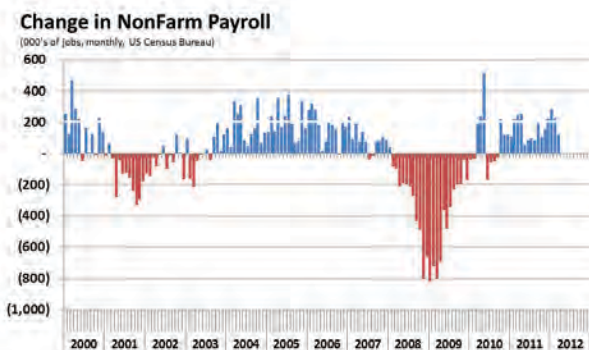


Figure 9

Housing Starts

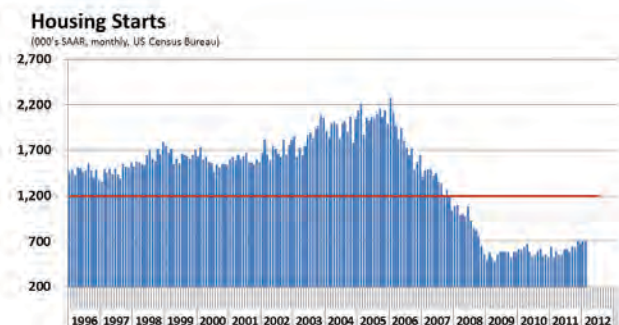


Figure 10

Steel Consuming Markets

| Industry | 2012F Growth Rate |
|------------------------|-------------------|
| Automotive | 4.7% |
| Railcar | 25.0% |
| Barge | 10.0% |
| NR Construction | 13.4% |
| Construction Equipment | 11.0% |

Figure 11

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demand, but I'm afraid the most recent housing bubble will break that correlation. Housing starts in the U.S. peaked in 2006 at 2.2 million units per year. This was almost double the historical average of 1.2 million units, the number required to sustain family formation rates. As you can see from the graph in Figure 10, the current annual run rate is about 700,000 for 2012. Although there is a positive trend starting to form and a 26% increase over the same period last year, it is still 71% below the historical annual average. The good news is that there is a de-linkage of correlation from housing starts to steel consumption, as steel consumption is forecast to grow even as the housing market appears to be on a much slower trajectory to recovery. Not a great sign for housing, but steel demand is growing at a much faster rate.

Where is the demand coming from? Well, other steel consuming markets are forecast to recover nicely this year, although from a lower base: automotive (4.7%), railcar (25%), barge (10%), non-residential construction (13.4%) and construction equipment (11%) growth is quite encouraging (Figure 11).

KEYS TO SUCCESS

The United States has continued to lose global market share in steel production, even though we have made vast technological and cost improvements and maintained our production levels. Over the last 60 years, we have dropped from the number one global steel producer to number three. If the forecasts hold true, we will be number five by 2025 (Figure 12). We may begin to see Peter Marcus of World Steel Dynamics as the new Father Hogan.

So, what are the keys to success? We cannot do this alone. We can only change the things we control. We have shown that, given the opportunity and a level playing field, with the technology and process improvements we have made over the last century, we have positioned

Global Steel Production

| World Ranking | 1950 | | 2011 | | 2025 | |
|---------------|---------------|--------|---------------|--------|---------------|--------|
| | Country | M Tons | Country | M Tons | Country | M Tons |
| 1 | United States | 96.8 | China | 681.8 | China | 920.6 |
| 2 | Russia | 30.4 | Japan | 107.9 | India | 153.4 |
| 3 | UK | 18.3 | United States | 85.4 | Japan | 137.0 |
| 4 | Germany | 13.4 | India | 71.8 | Russia | 130.8 |
| 5 | Japan | 9.5 | Russia | 68.8 | United States | 109.9 |
| 6 | Belgium | 5.3 | South Korea | 67.7 | South Korea | 80.1 |
| 7 | Canada | 3.3 | Germany | 44.2 | Brazil | 72.5 |
| 8 | Czech | 3.2 | Ukraine | 35.6 | Ukraine | 64.8 |
| 9 | Poland | 2.8 | Brazil | 35.0 | Turkey | 55.9 |
| 10 | Luxembourg | 2.7 | Turkey | 33.8 | Germany | 49.6 |

Source: AISI & WSD

Figure 12

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our industry to compete globally. Energy costs, labor costs, productivity, efficiency and an open market with outstanding technical and manufacturing capability and a mature market make the U.S. a great place to manufacture steel and steel-related products. Still, we need help from our leadership in Washington. We need them to stand up in support of the iron and steel industry by enforcing fair trade legislation, ensuring we are not at a disadvantage under global climate regulations, work together to protect and create new manufacturing jobs, pass a long-term transportation bill to ensure our infrastructure can support economic growth and bring prosperity back to our industry and nation. Those of you who travel internationally must surely recognize that the infrastructure for highways, rail, bridges and airports is falling behind even Third World countries. Anyone been to Newark or LaGuardia airports recently?

In summary, during each of these periods of contraction and growth in the steel industry, economic conditions and global competitive forces drove a passion for improvement that led us to new highs of productivity and lower cost levels. As history has shown, it is the tough conditions that drive us to become a stronger industry, and I have confidence that the future will be no different. We have been tested and passed...with flying colors. We will emerge from this downturn stronger and will have found ways to improve productivity and stay competitive globally. The light at the end of the tunnel is shining brighter, and if you look closely, it may be the glow from molten steel. The next advancement in steel-making technology is in good hands — your hands.

Thank you for your attention and allowing me to speak today to share some of my thoughts on our exciting industry. And thank you from the entire Commercial Metals Company team. We stand with you, ready to support our industry and to help rebuild this great country!

