

19th International Forging Congress 2008

Session 1: Forging Trends - The Americas

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TRANSCRIPT

When I was asked to make this presentation I had a couple of concerns.

In attempting to identify industry trends one inevitably deals in averages and generalizations. I'm reminded of the old observation that with one hand in the oven and the other in the freezer, on average you are comfortable. So I ask that you accept that my comments are intended as generalizations and do not necessarily apply to any given company.

Secondly, I worried that my personal bias might be reflected in my comments. After some thought I decided "It's OK" – So please take my comments in that context with the disclaimer that I have not attempted to eliminate personal biases.

This morning I am going to discuss various economic, performance, market, cost and strategic trends as they either directly or indirectly apply to the Forging Industry here in North America. The data I will discuss is generally available, mostly public information intended to demonstrate the overall direction in the industry, and it does not necessarily imply exhaustive research on my part

As a general overview, the forging industry has enjoyed a very successful period over the last four years.

Coming out of the steep downturn in 2000 to 2003, the industry has seen steady growth approaching 20% per year through 2007.

For the most part the industry has followed the trends of its customers in commodities markets particularly oil, transportation, the construction industry and aerospace which have all shown impressive growth. The auto and light truck market has lagged, however, and the portion of the forging industry that serves this market has similarly lagged.

Overall the trend in 2008 remains strong, though there is an air of caution.

Much of that caution stems from an economy that has to be described as "a bit sick".

Following a dip in 2001, Growth in the US economy as measured by GDP averaged around 3% from 2003 through most of 2007. However toward the back end of 2007 economic growth stalled, and recently revised figures reported a slight contraction in the 4th quarter of last year. In the first quarter of this year the economy again began to grow, albeit at less than a 1% annual rate. Recent numbers indicate a return to 3% growth rate in the 2nd quarter aided by the government's stimulus package.

So what's the impact on the forging industry? Well one hopes that the predictions of a recession are overly pessimistic and the economy has turned the corner in the US. The remaining question is the economic outlook elsewhere in the world.

One of the key factors dragging down the US economy is the so called "sub-prime" lending debacle we have experienced over the last couple of years. For the prior two decades the US enjoyed a "housing bubble" that encouraged a record level of home ownership and also pushed housing prices to record levels.

However, questionable lending practices coupled with low teaser rate adjustable rate mortgages made toward the end of that bubble were a disaster waiting to happen. With a large number of those mortgages beginning to adjust in 2005, we began to see softening in this market. By 2007 we saw a full scale collapse. The impact has been felt in global financial markets; we have seen financial crises on Wall Street, and some regional bank failures; and there is plenty of political rhetoric about this in our current presidential campaign.

The impact on the forging industry has been mostly indirect and results from the tightening of credit and the lack of liquidity needed to enable investment by our customers, suppliers and ourselves.

Employment in the US has paralleled the general economy. Unemployment peaked in 2003 and steadily fell through early 2007. Since then we have seen an increase in the unemployment numbers, and job losses have exceeded job creation throughout the first half of 2008.

Closer to home, in Manufacturing and the forging industry the trend has been more disturbing. Since 2000 there have been some 4 million manufacturing jobs lost in the US economy. These were lost in part due to productivity improvements (perhaps a good sign), in part to domestic restructuring, and in part to the move of manufacturing offshore to so-called low cost areas.

The result is a continual move of the US economy away from manufacturing toward a financial and service economy.

The reality of this has forced the industry to focus efforts on improving productivity and competitiveness and to think more globally in contrast to a more isolationist / protectionist posture of the past.

Since 2002 there has been a 40% decline in the value of the US dollar. As such, we have seen significant increases in commodity prices, particularly exaggerating the run up in oil prices. We have seen our central bank try to exert monetary policy with questionable effect. The recent modest strengthening in the dollar may indicate a correction or may be more tied to worsening economic conditions overseas.

The impact on our industry has been mixed. We are experiencing higher cost of imports, energy and raw materials, however, our competitiveness, and the competitiveness of our customers, in the export market has been helped. It's also made foreign investment in US manufacturing more attractive.

The US is a country that seems to like deficits. Our trade imbalance reached a record \$811 billion dollars in 2006. With 70% of our oil needs now imported our dependency on foreign oil has continued to

aggravate that deficit. At the same time the US government budget deficit has reached record levels, financed by huge amounts of foreign borrowing. The effect on our industry is indirect, as domestic investment has suffered.

In discussing the trends in North America, there is a tendency to focus only on the US. However, as our major trading partners and participants in the North American Free Trade Agreement, Mexico and Canada also have been impacted economically. For the most part their economies have paralleled that of the US. However there are some interesting side issues. The weak US dollar has shown up in a relatively strong Canadian dollar hurting trade with the US, and negatively impacting Canada. Mexico has a very large oil industry with some 40% of the economy tied to oil. However, they have not been able to take advantage of that as much as they possibly could or should have.

We have seen resurgence recently in manufacturing development in Mexico, particularly European investment. Some of this is driven by the strength of US exports and by the high cost of transportation.

So in summary;

Solid growth in the North American economy has stalled recently in part due to a rising credit crisis; we have seen increasing unemployment and job losses particularly in manufacturing; we've seen inflation in the cost of oil and other commodities, and there is considerable consumer uncertainty.

The prospects are uncertain at best, however the bright spot for US manufacturing, and the forging industry, is in export strength stemming from improved productivity and helped by a weak dollar.

I'll turn your attention now to some specifics about the forging industry itself.

The total output of the North American Forging Industry is estimated to be some \$12-14 Billion annually. This includes those operations that are captive or in house and those selling standard or catalog type product. The largest sector of the industry, however, is the Custom forging companies – typically small to medium in size, producing made to order forgings as raw material input to other manufacturing industries. Sales of Custom forgings have steadily increased in each of the last five years from about \$5 Billion in 2003. These companies currently account for about \$10 Billion of annual sales, and operate some 295 plants employing around 30,000 people.

The Forging Industry Association is our representative organization and includes 119 member companies, 87 supplier members and 19 academic members. The association membership accounts for 58% of the North American operating plants and 70% of forging sales.

The largest sector of our industry is engaged in Impression Die forging, accounting for over \$6 billion of sales in 2007.

About 30% of impression die forging sales go into the automotive industry with aerospace accounting for about 27%. Other key markets include Heavy Trucks, Off Highway equipment, and oil exploration and production.

Some of the larger North American producers of impression die forgings are Alcoa, American Axle and Manufacturing, Formtech, Hephaestus Holdings, Ladish, Thyssen Krupp and Wyman Gordon.

Open die forging accounted for about \$1.8 billion in 2007 sales. The market for open die forgings is more diverse. Major markets include construction, mining, and oilfield, general industrial equipment, and aerospace, among others.

Some of the largest North American producers are The Ellwood Group, Patriot Forge, Scot Forge, Standard Steel and Weber Metals.

The final sector of the industry, Rolled Rings, had 2007 sales of about \$1.5 billion. This sector's sales are dominated by the aerospace market, but also include such major markets as the oilfield and bearings markets.

Some of the largest North American Ring Rollers are Carlton Forge, Firth Rixson, Frisa, Ringmasters and Scot Forge.

No industry is able to exist without its customers. So, I'd like to provide some brief information about trends in the major markets for North American forgings.

In 2006 the aerospace market became the largest user of North American forgings. 2007 sales topped \$2.6 billion. This is up over 100% from about \$1.2 billion in 2003. This market shows little sign of the dramatic cyclicity that has defined it for the past 40 years. Based on backlog orders, Boeing and Airbus are essentially sold out through 2010, and all parties agree that the demand for air travel worldwide will result in a forecasted commercial aircraft build of some 28,000 airplanes over the next 20 years, averaging well above any previous cycle peak.

Add to this a defense budget that continues to be the world's largest and includes big programs like the F-35 joint strike fighter and the hotly contested tanker program, plus an almost insatiable appetite for luxury business jets and an emerging market for what are termed very light jets, and you have a strong market place indeed.

About 38% of the FIA members report sales in the aerospace market.

Automobiles and light trucks are traditionally the largest market for impression die forgings in North America. 2007 sales to this market were \$1.8 billion. The automotive industry produced 17 million units in 2005 but is forecast down 20% at about 14 million units for 2008. Forging sales have followed that trend. However forging companies in North America have found opportunities in the restructuring of the North American auto industry, particularly US production of foreign brands, as well as in exports. Additional opportunities are seen in design changes to address consumer preferences for fuel economy, including the use of light weight materials.

This market is served by about 37% of FIA member companies.

Heavy Trucks and Off Highway and construction equipment are major users of North American forgings. Together they accounted for about \$1.3 billion in 2007 sales. The Truck market peaked in 2005 and 2006 as operators ordered in advance of diesel emissions regulations that took effect in 2007. Meanwhile the strength in exports of off highway and construction equipment, to meet the needs of overseas infrastructure development, has continued and is expected to remain strong through 2009.

About 55% of FIA members report sales in one or both of these markets.

The most dramatic market expansion in the past five years is the oilfield. Sales of forgings in this and related markets have grown over 5 fold since 2004 approaching \$600 million in 2007.

With the continued high price of oil, and demand exceeding supply, increased exploration and production is inevitable. The Political debate in the US is over allowing exploration in such environmentally sensitive regions as the wildlife preserve in Alaska and in as yet undeveloped offshore fields.

This market is served by about 35% of FIA members.

Next to customers, the most important outside influence on the forging industry is raw materials. Because these raw materials are generally worldwide commodities, the trends we have seen in North America are probably not significantly different from what any of you have experienced.

Coincident with the forging industry resurgence in 2004 was a rising worldwide demand for steel. Here in North America we experienced shortages; which translated into allocations. Beginning in 2003 the price of steel rose rapidly, stabilizing somewhat by 2007 and then in 2008 has again shown a dramatic upswing. The combined impact of energy costs, increases in scrap and alloy elements and transportation costs has resulted in prices 3 times what they were just 5 years ago. None of these factors shows any sign of abating, and worldwide demand remains strong, so pricing is expected to remain high for the foreseeable future.

Steel is not the only metal to experience price increases. Most other forging grade metals have seen price increases of 2 times or more since 2003. In the 2006 to 2007 time period nickel, titanium and aluminum all reached record pricing levels due in part to the rapid growth of the aerospace industry, generally high worldwide demand, and commodity fund trading. Since then capacity increases have been announced and made, and there has been consolidation in the upstream supply chain all the way to the mining companies. Because these metals are generally traded in dollars, the weak dollar has tended to be disadvantageous to US forgers, except in the aerospace market where the end item is also traded in dollars. Interestingly, the concerns over fuel economy in the auto market have raised the probability of light weight materials displacing steel in the next generation of design.

Two areas that are figuring more prominently in the North American Forging industry of late are energy and the environment. Both impact the industry from multiple directions: in the market place, in our operating costs, and in the public sector and compliance arena.

From an operating cost standpoint, gas and electricity costs have both risen significantly since 2003. Gas is interesting in that as a dollar based commodity, the weak dollar price tends to make US forgers less competitive in relative terms, but the abundance of gas reserves in North America has the potential to mitigate that against high LNG prices worldwide. However, there is reason to expect increases in worldwide LNG supply, and thus reduced prices, by next year.

The doubling of electricity costs in the last 5 years is due in part to dollar inflation, and in part to environmental restrictions on domestic power generation; These restrictions had the effect of limiting the advantage of abundant coal reserves in North America, curtailing the use of nuclear power, and forcing power companies to compete in the world market for petroleum fuels.

There is however a renewed incentive in North America for energy efficiency and the development of alternatives.

The 600% increase in oil this decade from the low \$20's to over \$140 per barrel is not news to anyone in this room, I am sure. As we have seen in more recent falling prices, oil prices remain very volatile.

Of course this has had dramatic impact on some of our forging industry major markets. The high cost of gasoline has put fuel efficiency at the forefront of consumer priority, prompting huge cuts in light truck and SUV production and pushing auto companies to come up with major improvements in designs for automobiles.

High Fuel costs have challenged the very foundation of business models for the airline industry which could potentially stall the boom in the commercial aerospace market. However, the need to replace aging and inefficient fleets is now more pronounced than ever. There is a drive to design ever more efficient aero engines and also to design in the use of synthetic fuels.

I spoke before about the boom in the oilfield and the need for forgings to support the increase in oil drilling and production.

And as a consequence of rising fuel prices, transportation costs have also risen to the point that our customers are rethinking the cost advantages they anticipated from manufacture in so called low cost regions.

On the environmental front, so called greenhouse gasses has come center stage. Internationally this discussion has taken many paths since it gained prominence with the Kyoto Protocol. EU emission regulations have been in place for several years and are set to become more restrictive with airline emissions targeted for control in 2011. More Recently Al Gore has forced the topic into the public debate here in North America, and the US congress has taken it up. There are some 2 dozen different "climate change" bills and proposals pending in the House and Senate, the most notable being the Lieberman-Warner Climate Security Act. The common theme of all of these is to cap or restrict, and ultimately reduce, Carbon dioxide equivalent greenhouse gas emissions. The favored mechanism is a system of credits that are in one way or another traded at market value.

The direct impact of this on the forging industry is possibly a limitation on operations and growth, and almost certainly an increase in energy costs. There is the likelihood that investment in new heating technologies will be required in order to meet emissions standards, or simply to remain competitive. We could also see an indirect impact if and when major markets are affected.

But the concern over the environment, fossil fuels, greenhouse gasses, and energy dependence has spurred a renewed interest in alternative and or renewable energy sources. Despite the lack of understanding of the basic laws of thermodynamics in the political arena, alternative means of transferring energy into usable forms is gaining ground and is impacting the North American forging industry. The resurgent Nuclear power market, first overseas and soon here, offers an expanded demand for forgings. Wind turbines are also a potential market for forgings.

Bio fuels, commonplace as a gasoline additive, are being tested in jet fuel. To the extent that a measurable supply of alternative fuels enters the market, we can anticipate reduced demand for oil, and a dampening impact on prices for conventional energy.

But all of this is outside free market forces, and influenced heavily by politics, so the real impact is anyone's guess.

So with all of that said, where is the forging industry of North America headed?

There is a renewed interest in cooperation and collaboration within the industry. We have a strong association in the FIA that provides membership with a number of needed services. Among these are publication of market statistics and the opportunity to benchmark, the development of technical resources, customer outreach to help buyers locate forging sources, and workforce developmental assistance.

Through the Forging Defense Manufacturing Consortium, the industry has worked with the defense department to promote the use of forgings, demonstrating their advantages through the Pro-Forge initiative. The National Tooling Database was created to identify the existence and location of dies by stock number to assist in the procurement of military spares. PFAST and the Job Shop Lean initiatives address productivity and cost concerns via the application of Lean philosophies in a forging environment.

The Forging Industry Educational and Research Foundation provides a medium to fund collaborative research, foster forging curriculum at the university level, and provide scholarships to encourage forging careers.

Finally the industry has become active on the political front, engaging our representatives in dialogue about issues that impact our industry.

In concert with FIERF, the FIA membership has put together a "Technology Roadmap" that is essentially a strategic plan to address the technical, economic and public sector issues in which we have a common interest. This was first published in 1997, but most recently updated this past May, and addresses such

issues as industry relations with our customer base, international collaboration, training, industry guidelines, legislation, materials, energy, and process innovation.

The most notable strategic change in our industry is the abandonment of our parochial view of the World. We have followed the lead of our customers and embraced the global nature of the market, aggressively pursued exports and begun to look at large, growth economies such as China and India as opportunities instead of risks.

Evidence of this cultural change in our industry is our hosting of this international conference this week.

The North American forging industry has begun to take charge of our future by seizing opportunities as they present themselves. We are enjoying some strong markets, such as Aerospace, while we have adapted to changes in traditional markets, such as automotive, and we are prepared to innovate to address new markets. By developing and applying innovative technologies, addressing cost controls and managing the impact of economic and political outside influences, we are making ourselves more globally competitive.

So in conclusion, the trends in the North American Forging industry provide a mixed message. We have undergone significant change. We still face some serious challenges. But we have made the commitment to excel and to cooperate as an industry. We have opened the window to the world market.

All told, I believe the positives outweigh the negatives, and there is great potential for our industry.