

World Steel Dynamics (WSD) is a leading steel information service in Englewood Cliffs, N.J. WSD's steel experience, steel database and availability of steel statistics are the principles for performing steel forecasts, studies and analysis for international clients. WSD seeks to understand how the "pricing power" of steel companies the world over will be impacted by changes in the steel industry's structure. To submit your questions for WSD, e-mail [WSD@aist.org](mailto:WSD@aist.org).



WORLD  
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## Q: How important is the workforce in the New Continuum in the steel industry?

A: WSD has always believed that the workers are the most important group at any steel company. Of course, being the most important group does not mean that it always wins. Equity owners, lenders, management, suppliers and even customers may come and go; it is the workers who often can't cut the umbilical cord with the steel plant (even in retirement!), for better or for worse.

## Q: Never-ending labor-management confrontation seems to be one of the foundations of the private enterprise system. What are some of the critical issues that workers should be considering?

A: Following are 11 key points or perspectives that WSD thinks are important for labor to think about.

### 1. Management makes a huge difference at a steel plant.

Let's begin by agreeing that we are now in an era in which most steel company managements are far more socially responsible than a decade ago. In most cases, they are more dedicated to: (a) reducing air and water pollution, (b) making the plants safer, (c) extensively training the workers and (d) keeping the workers more informed. Nevertheless, it still seems highly likely that the more enlightened managements will have much more success in paring costs, maximizing output, improving the product mix, empowering workers, dealing with customers and making the right decisions during times of stress.

It is my experience, based on 47 years of studying the steel industry, that the most successful companies have "kings" at their helm. The most effective kings, in turn, are those that: (a) absorb huge detail (i.e., they know everything), (b) are highly visionary and conceptual, (c) work day and night, and (d) empower other managers in the company, and the workers, to make decisions.

WSD published a new list in 2002 of what we called "world-class" companies that: (a) had grown stronger during the industry's period of adversity, (b) would each year make decisions that further enhance the competitive strength of the company and (c) were positioned to be winners in the future. The current list includes 26 companies, most of which have kings at the helm.

### 2. Steel company workers in many countries are often among the highest paid workers in their country.

The relatively high pay is the consequence of many factors, including: (a) the high investment per worker, (b) the significant proportion of government-owned companies in the past and (c) the existence of unions.

There is no doubt that the unions' presence raises the worker wages. The best union leaders, no doubt, can be called socialistic in some respects because they believe so deeply in the transfer of wealth to the workers. Once a union becomes established in an industry, nonunion companies in the industry often pay their workers a generous

competitive wage so that they won't vote to become unionized.

WSD believes that a strong management can be highly successful in dealing with its workforce, whether it is unionized or not.

### 3. Even if steelworkers in a developing country earn a premium wage versus those in other industries, this does not mean that they are well off financially and/or that there is an easy path to obtaining high wages by global standards.

For example, if wages rise 8% per year more than inflation over 10 years, they will rise by 2.2 times. However, if the starting wage is \$3 per hour, the figure 10 years later, at about \$7 per hour, would still be relatively low versus the \$50+ per hour figure that is earned today by steelworkers in a number of countries in the developed world.

According to World Steel Dynamics "World Cost Curve" data, as of the fall of 2006, some of the highest employment costs per hour at some steel plants were as follows:

- United States . . . . . \$37-50
- Germany . . . . . \$50
- France . . . . . \$47
- Japan . . . . . \$42
- South Korea . . . . . \$25
- Taiwan . . . . . \$20

Some of the lower hourly employment costs at some steel plants were:

- China . . . . . \$2.24
- Ukraine . . . . . \$2.50
- Russia . . . . . \$3.25
- India . . . . . \$4.50
- Mexico . . . . . \$10.50
- Brazil . . . . . \$14
- Eastern Europe . . . . . \$8-15

### 4. Steelworkers globally have far greater wage disparities than skill disparities.

Factories can be designed nowadays, with the use of the computer, to produce a high-quality product without the need for a high proportion of highly skilled workers. For example, good quality cars are now being built all over the world.

In order to save labor costs, especially in labor-intensive industries (steel is not one of them), many industrial plants have been newly built in, and/or shifted to, the developing world.

Fortunately for high-waged steel company workers in the developed world, labor cost nowadays is a relatively small proportion of costs if the steel plant is efficient. The labor cost may be far less than the cost to transport steel from one continent to another. What this means is that the workers at steel plants in the developed world need to encourage management to keep the plant efficient, to continue to upgrade the product mix, and do other things, like

improving raw materials sources, that add to the competitive position of the company.

In China, some steel plants have close to world-class manning despite the low wage.

### **5. Exchange rate movements make a huge difference to steel companies and their workers.**

If an exchange rate were to appreciate by 100% versus the U.S. dollar over 10 years, the wage figure of \$7 per hour mentioned above would rise to \$14 per hour. The problem is that the overall production cost of the steel company would also rise sharply in those goods in which costs are home-country denominated.

I've often said over the years, "What is good for a steel company – i.e., a weak currency – is not good for the country." When the exchange rate is weak, steel companies tend to have higher profits because of lower costs; however, this is a factor driving down the wage per worker on an international basis.

The best outcome for high-waged steelworkers in the developed world is to hope for the following:

- Their company is prosperous.
- The company has a high-end product mix.
- The company is highly efficient when it comes to the use of labor, energy and raw materials.
- The company owns its sources of iron ore and coking coal.
- The company has loyal customers.
- The country has trade barriers that protect the domestic market.
- The currency does not grow much stronger.

Wages are so low in China that, without a major currency appreciation over the years, workers' wages even in a decade will not be high enough to create a major consumer-led economic boom. China's policymakers need to maintain the country's extraordinary emphasis on fixed asset investment growth in order to keep the economy expanding at a high rate. (Note: High fixed asset investment spending is dis-inflationary because it creates new capacity.)

### **6. Steel's technological revolution, which is still accelerating (as it is in most industries), has profound implications for steel companies and their workers.**

The technological revolution is the industry's "youth pill," beginning with the start-up of Nucor's first thin-slab flat rolling plant in Crawfordsville, Ind., in 1989.

The technological revolution has reduced the cost to build a high-end steel plant. Chinese design and engineering firms will be providing severe competition to the world's leading steel equipment manufacturers in the future once capital spending on steel in China slows down.

Product quality and the range of higher-end steel products offered are remarkably improved versus 20 years ago. A growing number of steel companies are making their products to far higher specifications.

Advancements in technology produce less severe working conditions. In general, steelworkers are better educated, plants are safer and there are fewer environmental hazards. Workers are more empowered. They more frequently are multi-tasked. There is a trend toward reduced "work rules" and the number of job classifications. Workers have more responsibilities.

We are also seeing differences in the pattern of hours worked. For example, in the U.S. minimill industry and at

some other steel companies, a common pattern of work is about as follows:

- 12 hours worked per day for four days, followed by four days off.
- 12 hours worked per day for three days, followed by three days off.
- Five days off in month about once per month.

This 12-hour-per-day work pattern may be more effective than in the past. According to one of the top U.S. minimill executives, "The worker today, in many cases, is employing 80% brains and 20% brawn. Twenty years ago, it was 20% brains and 80% brawn."

The more skilled a company's workforce, the more likely that it will be a "winner" in the future. The steel technological revolution has made the steelworkers' jobs more pleasant, safer, more satisfying, better paying and more important. Hence, it is mandatory that workers are well trained and flexible in the tasks that need to be accomplished. Worker loyalty is critical.

### **7. Steel is remarkably international in nature.**

The steel industry is vast when considering the raw materials supplied to it, the many processes needed to produce the finished product and the extent to which much of it goes to middle-man companies before it reaches the final manufacturer of the steel-containing product.

- Global steel product and semi-finished product exports amount to about 375 million tonnes per year, or almost 35% of total deliveries.
- Shipments of iron ore via ocean transport amount to about 800 million tonnes per year.
- Shipments of coking coal via ocean transport come to another 200 million tonnes (plus 575 million tonnes of steam coal).

Marketplace developments in one country, including spot transaction prices, are almost instantly known in others.

On the world export market, probably at least 100 steel companies are offering to sell their products.

### **8. The surge of raw material costs in recent years, combined with sharply improved labor productivity, has profoundly changed the economics of the steel business and the interaction of the labor cost component with other cost components.**

When the man-hour-per-tonne-shipped figures are very low, the labor cost per tonne shipped becomes an increasingly less important cost factor compared to the material cost per tonne shipped. For example, the new SeverCorr steel plant in Mississippi is planning a workforce of 650 people in several years when it achieves a shipment rate of about 3.4 million net tons per year. Granted that the employment cost of each worker is \$100,000 per year, the employment cost amounts to about \$65 million – or only about \$20 per ton shipped.

The employment cost per tonne in a highly efficient steel plant is no longer as critical a factor as before. For example:

- In 2001, if a U.S. mini sheet mill had an operating cost of \$250 per metric tonne (\$227 per net ton), this might have been composed of a labor cost of \$30 per tonne (\$27 per net ton) and other costs (largely material costs) of \$220 per tonne (\$200 per net ton).
- In 2007, if the operating cost is \$480 per tonne (\$435 per net ton), the labor cost might still be about \$30

per tonne (due to higher volumes that reduce man-hours per tonne), but the other costs would be about \$470 per tonne (\$409 per net ton). There has been a huge rise in energy costs, electrode costs, scrap and metallics costs, ferro-alloy costs (which are higher per tonne in an EAF shop than a BOF shop) and other costs.

## 9. The steel industry is substantially influenced by macroeconomic factors because it is a derived demand industry.

Steel is not consumed directly; it is consumed in the manufacture of other goods. Steel demand globally is about 40% construction oriented, 40% capital spending oriented and 20% consumer durables oriented.

A remarkable positive for the global steel industry since about 2002, as noted earlier, is the rising ratio of fixed asset investment to GDP in most countries. When GDP growth is higher, there is a need for more infrastructure and new plants.

The steel industry is vulnerable to “destabilizing events” that slow down the growth of steel demand. Slower steel demand growth leads to oversupply of steel and poor pricing conditions from the mills’ point of view. Four events since WWII have substantially negatively impacted the steel industry. These destabilizing events, in WSD’s opinion, were as follows:

- President Nixon’s devaluation of the U.S. dollar in 1971, including the abandonment of the gold standard. This development led to surging oil prices, price controls in the United States, high inflation and reduced global growth for the next 20 years.
- The collapse of the Berlin Wall in 1979, followed by the dismantling of the Soviet Union in the 1985-91 time frame, which drove down steel consumption in the former Soviet Union and Eastern Europe from a peak of 186 million tonnes in 1988 to 47 million tonnes in 1997 – a decline of 139 million tonnes. In 2006, steel consumption in these regions was about 75 million tonnes, or 28 million tonnes more than in 1988.
- The Asian financial crisis of 1997, which slowed the world economy for several years. Policymakers in developing countries in this crisis learned about the danger of a strong home currency.
- The massive Russian ruble devaluation in 1998, which drove down the operating cost to produce hot rolled band to \$100 per tonne from \$300 per tonne. Given the reduced demand for steel in the home market and the far lower costs, steel products from the CIS flooded the global market.

What might be the next destabilizing event, if there is one? WSD thinks that it will be a financial crisis, such as a collapse of the U.S. dollar, that leads to rising inflation and reduced global economic growth.

## 10. History shows it is difficult for a steel company to sustain its competitive advantage on a long-term basis.

It is not easy for a steel company to sustain its “economic rent” on a long-term basis. Many factors change over the years, including the advantage of owning raw materials, exchange rates, the growth rates for steel demand, new technologies, and so on. The “industrial structure” of the steel industry, and steel mills’ ability to at least pass on

their costs, is always changing. For example, in the past 40 years, the best and worst places to build a steel plant have shifted dramatically.

## Where to Build, or Not Build, a New Steel Plant

Best regions today	Best regions 40 years ago	Worst regions today	Worst regions 40 years ago
India	Japan	Venezuela	United States
Russia/Ukraine	Germany	China	Russia
Middle East	France	Germany (EU)	India
United States	Taiwan	Japan	Eastern Europe
Brazil	Canada	Taiwan	South America

We are also witness to huge swings in the relative cost position of steel-scrap-using EAF-based steelmakers. These mills enjoyed a huge cost advantage to produce steel sheet products in the 1990s due to relatively low steel scrap prices. In 2001, when the steel market was weak, the price of #1 heavy melting steel scrap delivered to the plant fell temporarily to \$80 per gross ton. The figure today is about \$280 per ton, with the low price in recent years at \$120 per ton in January 2003 and \$142 per ton in June 2005.

The lowest cost steelmakers in the world, when it comes to the production of hot rolled band, appear to be located in Brazil, China, India, Iran, Kazakhstan, Russia, South Africa, Ukraine and Venezuela.

## 11. The biggest risk to the global industry and its workers is that oversupply in China brings down the non-Chinese steel mills’ pricing structure. China steel production at present amounts to about 490 million tonnes per year annualized versus 129 million tonnes of output in 2000. Non-Chinese output at present is about 860 million tonnes annualized. Capacity additions in China remain prodigious.

What actions might the labor union take to combat the Chinese steel industry and/or to lessen this risk? The unions might:

- Jawbone the Chinese government to accelerate the rise in the value of the Chinese RMB.
- Encourage the Chinese steel companies to merge with their competitors elsewhere in the world.
- Help Chinese steelworkers to become more empowered, which could lead to faster wage growth in China.

## Conclusion

Even though labor costs are only a small portion of costs at steel plants in the developing world and at efficient steel plants in the developed world, this does not mean that a steel company’s workers are less important than before. The skill of the workers and their dedication to their company’s culture will continue to be the most important elements in the success of winning steel companies. ♦

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