COMPETING WITH CHINA
LESSONS FROM SOUTH KOREA’S MANUFACTURERS

By Sunghun Park

The 2008 financial crisis reminded many countries of a fundamental reality: a strong manufacturing sector is required to maintain a healthy economy and to compete globally. Earlier in the decade, many developed nations saw their financial sector grow to dominate their economy. The global meltdown, however, made clear the risks and detrimental effects of one sector assuming such a pivotal position and of countries moving away from producing tangible products. As a result, developed nations that neglected their manufacturing sector have begun to throw their full weight behind rebuilding it.

As these countries refocus, however, they are finding that the competitive landscape has changed. China has become a formidable rival. During the past decade, the country’s manufacturing sector has grown exponentially, aided by low wages, a large domestic market, and government support. South Korea’s manufacturers have long felt the heat of Chinese competition and feared being surpassed despite being more productive and technologically more advanced. A recent reappraisal of the sector by The Boston Consulting Group found that South Korea continues to have an edge over China regardless of the latter’s incessant focus on supremacy.

Our research included an assessment of the main sources of competitive advantage for each country’s manufacturing sector and determined which South Korean industries are the most and least vulnerable to Chinese competitors. This article discusses these findings, which hold lessons for all countries and companies that have a rival in China and are looking to maintain their edge.

The Sources of Competitive Advantage
Maintaining a lead in the manufacturing sector cannot be accomplished by excelling in a single area such as cost or productivity. In fact, companies should be mindful of nine sources of competitive
advantage, which we categorize as direct and indirect. The direct sources of competitive advantage are the cost of materials and labor, the cost of capital, productivity per unit of capital, technological sophistication, product quality, and brand power. The indirect sources are home market, the talent pool, and government support.

Our analysis shows that China’s manufacturers have a competitive advantage over South Korea’s in terms of the cost of materials and labor, the size of their home market, and the amount and types of government support they receive. South Korean companies, however, are ahead of their Chinese rivals in terms of productivity per unit of capital, technological sophistication, product quality, and brand power. Chinese manufacturers’ reputation for poor quality has persisted as South Korean companies have stepped up their pace of innovation to meet consumers’ ever-changing needs and preferences.

South Korean companies are also beginning to compete on cost. They have pursued an aggressive relocation plan and shifted some of their manufacturing bases from China to lower-cost countries, such as India, Indonesia, and Vietnam. In 2000, South Korean companies had 90 percent of their offshore-manufacturing operations in China; by 2010, that number had dropped to 70 percent. This move has not only reduced their costs but also enabled South Korean companies to grasp and meet the needs of customers in these rapidly developing economies, thereby diversifying their markets.

This two-step globalization process is fostering the continued manufacturing success of South Korean companies and enhancing their sales. But can it help them sustain a competitive lead? As rising wages cause China’s cost advantage to decline, its companies will look for new sources of competitive advantage. Faced with an evolving Chinese manufacturing sector, there is no guarantee that South Korea will be able to sustain its current competitive position. South Korean manufacturers must therefore focus on defending their existing sources of advantage and developing new ones.

Gauging Competitiveness

To identify which industries are potentially the most and least vulnerable to competition requires analyzing the catch-up difficulty and the length of the innovation cycle for each one.

The easier it is to catch up in an industry, the easier it is for other manufacturers to penetrate it and the harder it is for the incumbents to defend their turf. The level of difficulty depends on whether the industry is built on explicit knowledge (information that can be documented and, therefore, easily transferred) or implicit knowledge (information that is implied and, therefore, less easily conveyed).

Industries built on explicit knowledge generally are comprised of companies with large-scale facilities and labor- and capital-intensive operations. Companies that manufacture commodity products, such as monomers and polymers, fit into this category. Such companies are at risk for imitation by latecomers.

By contrast, companies in industries built on implicit knowledge rely on knowledge workers, a high level of technological sophistication, and in some cases, brand power. Therefore, catching up in these industries is more difficult. Companies that manufacture industrial goods generally fall into this category.

How easy or difficult it is for companies to enter an industry also depends on the length of the innovation cycle. We call industries with long innovation cycles “slow clock” industries and those with short innovation cycles “fast clock” industries. In slow-clock industries, product materials or product functionality or both are fixed or change infrequently, making it easy for latecomers to compete. In fast-clock industries, the opposite is true. It is possible for a slow-clock industry to build
a high barrier to entry by preserving implicit knowledge or by introducing a disruptive technology that speeds up the rate of change.

Assessing South Korea’s Industries

To determine how vulnerable South Korea’s manufacturing sector is to Chinese competition, we analyzed each of South Korea’s flagship industries and then plotted the results. (See the exhibit “Assessing the Competitive Advantage of South Korea’s Manufacturing Industries.”) Although many industries are firmly in one of the following four zones, a couple of industries are in transition:

- **The Comfort Zone.** Industries that rely on implicit knowledge and have a fast-clock innovation cycle are in the comfort zone. These industries are the most difficult to enter, therefore, players can focus on competing with market leaders without worrying too much about Chinese latecomers.

- **The Discomfort Zone.** Industries that depend on implicit knowledge and have a slow-clock innovation cycle are at risk. These companies often lose trade secrets, technical knowledge, and valuable skills when employees take jobs with other companies. To gain an edge in these industries, companies must introduce a disruptive technology that speeds up the pace of change.

- **The Danger Zone.** Industries that rely on explicit knowledge and have a slow-clock innovation cycle have a slim advantage over Chinese competitors. These industries are the easiest ones in which China could assume the lead. They are especially vulnerable when Chinese competitors possess most of the know-how.

- **The Warning Zone.** Industries that depend on explicit knowledge and have a fast-clock innovation cycle are in the warning zone. Although these industries are difficult for rivals to overtake owing to continuous technological innovation, it is possible.

What became clear during our analysis is that there is often a gap between common perceptions about these industries and the reality. The mobile-phone industry, which is in the comfort zone, is generally thought to be under pressure from many players in

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**Assessing the Competitive Advantage of South Korea’s Manufacturing Industries**

- **Warning zone**
  - Semiconductor (memory chips)
  - Flat-panel display
  - Home appliance
  - Energy or generation facilities

- **Comfort zone**
  - Mobile phone

- **Danger zone**
  - Automotive
  - Steel
  - Petrochemical

- **Discomfort zone**
  - Automotive
  - Shipbuilding

Source: BCG analysis.
China, but the reality is different. Rapid changes in mobile-phone technology—in part spurred by consumer trends for cutting-edge and increasingly sophisticated products—make it more difficult for latecomers to catch up than it is commonly assumed.

In the steel industry, technological competitiveness matters less than many think, so it is moving from the discomfort zone into the danger zone. The path for technology developments is predictable, making it possible for latecomers to buy large-scale facilities with proven productivity—or even to build new state-of-the-art facilities leveraging new technologies.

The petrochemical industry is a field where Chinese heavyweights are increasingly expected to make significant investments and quickly expand market share, so it is in the danger zone.

Finally, consider the semiconductor industry, which is in the warning zone. It is generally considered safe from Chinese competition because of the wide technology and quality gaps between South Korean and Chinese players. But aside from memory chips, the picture is not so positive. In other product categories, such as microprocessors or integrated circuits, the industry could succumb to Chinese competition.

Maintaining an Edge

Clearly, South Korean manufacturers should not underestimate the challenges that lie ahead, but neither should companies in other countries. Chinese players have the will and the capital—and are quickly acquiring the technology—to compete in most major industries.

Most at risk are companies whose competitive advantage hinges on high productivity as a result of operational excellence. These manufacturers must improve product quality and build brand power on the basis of innovation leadership. Our research shows that companies should heed several lessons to be successful.

- **Accelerate the speed of technology development.** The pace of imitation is quickening. Companies should consider establishing R&D organizations and evaluating other ways to speed up technological advancement and innovation.

- **Avoid tradeoffs between quality and productivity when entering premium markets.** For a company to succeed in high-end markets, it must prove that it has high standards for product quality and that those standards do not come at the expense of productivity. Companies could advance their lead over Chinese competitors by partnering with global top-tier players that know how to manufacture premium products.

- **Maximize global advantage by partnering with Chinese companies.** As Chinese competitors advance their technical expertise and product quality to meet global standards, manufacturers may find it hard to compete. In this case, companies should consider partnering with Chinese players to gain access to their networks (for labor and materials) and their core markets.

South Korean manufacturing companies have maintained their competitive advantage by shifting their manufacturing bases to low-cost countries, diversifying their markets, and quickening the pace of innovation to meet consumers’ ever-changing needs and preferences. At the same time, China’s manufacturing sector has shown signs of weakening; rising wages are eroding its cost advantage and its reputation for poor quality persists.

Given China’s focus on manufacturing success, however, the competitive advantage that South Korea currently enjoys is unlikely to continue without significant effort to maintain it. Other countries and companies that are in a similar position should take note. The only way to stay ahead of such a formidable foe is to take the game to a whole new level.
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