

Where is China's manufacturing  
industry going?  
Deloitte China manufacturing  
competitiveness study 2011



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"The future of China's manufacturing represents the future of emerging economies and the future of the world."



**Chris Lu**  
CEO  
Deloitte China

"There is still a long way to go for China to transform from a manufacturing giant to a manufacturing power. Innovation and operational excellence are the keys to the transformation."



**Rosa Yang**  
National Leader  
Manufacturing Industry  
Deloitte China

# Foreword



**Kenneth Joel Dewoskin**  
Director  
China Research & Insight Centre  
Deloitte China

We are pleased to present Deloitte China Manufacturing Competitiveness Study 2011. Based on a survey with senior executives from 150 large and medium sized manufacturing companies in China, and interviews with executives from some leading enterprises in major sectors, the report contains an in-depth study on the development and competitive landscape of China's manufacturing industry in relations to other Asian countries. At the same time, it also reviews the challenges the industry will face in the future, as well as the corresponding strategies that companies should adopt.

With the rapid growth of the Chinese economy and its rising position in the economic globalization, China manufacturing industry has been regarded as highly competitive in the global market. However, China's successful climb to the top of the world's competitive manufacturing countries was long been deemed as primarily driven by cheap labour. Therefore, following the aging population in China, rising labor costs and shortage of human resources have been considered as the biggest challenge for the future development of the industry. However, our research has different findings. According to our analysis based on the data from National Bureau of Statistics of China, World Bank Group and various authoritative sources and the responses to this survey as well, we have found that a key competitiveness factor for China's manufacturing is China's labor resources can qualitatively and quantitatively satisfy the needs arising from the structural changes of the industry. Indeed, the advantage of low labor costs in China has been crucial to the competitiveness of the industry. However, comparing with other Asian countries, factors like production efficiency, organizational efficiency and labour technique are also major contributors.

Competitive edges of manufacturing industry in China still include the huge but to be further explored domestic demands, supports from the central and local governments, continuous investment in infrastructure, as well as the highly competitive culture of patience, persistence, innovation, and frugality, which is established in the last 30 years by the China's private sector manufacturers.

Whilst China is gradually dominating the global manufacturing markets, there are some issues and challenges should not be overlooked. Over 50% of the executives surveyed believe that innovation is the biggest challenge for China manufacturing industry to maintain its competitiveness in pursuing transformation and upgrading. Other issues include inexperience in internal management improvement, integration of global resources and overseas operations, as well as the comparatively weak business service system.

Under the turbulent global economy environment, to attain the goals of transformation of growth pattern and integration of global supply chain, correct guidance from government policies to facilitate innovation and excellent management will have significant impact on enhancing the competitiveness of China's manufacturing industry.



# Chapter 1: Why invest in China

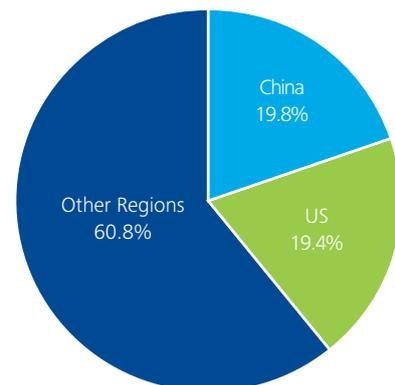
## 1. China in the global manufacturing industry

Based on responses to a survey of more than 400 CEOs and senior executives in the manufacturing industry worldwide, and on the analysis of key factors influencing manufacturers' competitiveness, Deloitte concluded that in the 2010 Global Manufacturing Competitiveness Index that "The epicenter for manufacturing continues to shift to emerging markets and Asia in particular. With the rise of China, India and Korea, Asia has become the most competitive location."

Since the publication of this report one year ago, there have been continued changes in the global economy –some quite significant. In Asia, a devastating earthquake and tsunami in Japan, the rapid increase in labour and raw material costs in China, along with other issues, have strongly impacted the global economy as well as the competitive position of nations to one another. To better take these new factors into account, Deloitte China conducted an ad hoc survey in 2011 on the competitiveness of China's manufacturing industry. Executives of 150 large and medium-sized manufacturing enterprises participated in the survey, and results show that despite of the volatility in the present global economy, China has managed to maintain sound development in the manufacturing industry. Looking at several key driving factors to national competitiveness in manufacturing, including the supply of labor force corresponding to the structural transformation of the industry, and sustainable investment in infrastructure, state policies and commercial dynamics in domestic market would help China to continue leveraging its advantages in the global competition.

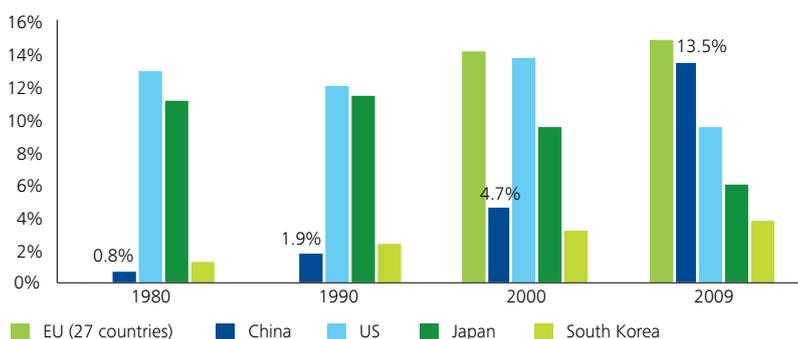
The Chinese economy has experienced rapid growth over the last 30 years. In 2010, China overtook Japan as the second largest economy in the world, with a GDP of US\$5.7 trillion (based on the international exchange rate). Such significant economic growth is largely due to contributions from development of the manufacturing industry. With a long history and solid foundation, China's manufacturing industry has experienced internal growth and has become a world leader in manufacturing export since the marketization reform and China's entry to WTO. According to data from an internationally-known economic consulting organization, IHS Global Insight, China's manufacturing output accounted for 19.8% (Fig. 1) of the global total in 2010, which surpasses the United States, (19.4%) making China the largest industrial manufacturing country in the world. In terms of manufacturing exports, WTO's statistics shows that China ranks second only after the EU, exporting 13% (Fig. 2) of the global total.

**Fig. 1: Ratio of China's manufacturing output to the global total**



Source: IHS Global Insight

**Fig. 2: Ratios of manufacturing exports of the major countries and regions to the global total**



Source: WTO

At the same time, China's manufacturing industry faces many challenges. Many Chinese products have low added value, a challenging position amid rising costs and a shrinking export market. In the current state of the global supply chain, China's manufacturing industry mainly plays the role of "manufacturing, processing and assembly" – which is the point on the "smiling curve" with the lowest value. In terms of patent technologies and purchase of upstream resources, China still mostly depends on developed countries such as Europe, US, Japan and other countries, which control a majority of the resources. Aside from this, China is weak in logistics, marketing and sales channels. The achievements and challenges of China's manufacturing industry interrelated and impacted on the development of manufacturing industry and even the overall economy.

At present, the government and enterprises are working to change the situation. China has made positive efforts to develop towards the high-end of the industry chain. There are an increasing number of Chinese companies, which have obtained advanced technologies and brands through overseas mergers and acquisitions (M&A), China's discourse power in the supply chain has been gradually increasing. However, in order to substantially increase the value of "Made in China" brands, Chinese manufacturers should improve their competitiveness in such aspects as technology, management, and marketing, so as to realize the change from labor-intensive to technology-intensive industry. These changes could include changes to ODM (Original Design Manufacturer) and OBM (Original Brand Manufacturer); as well as changes from parts manufacturing to manufacturing of the whole machines; and from globalization of a single business to globalization of multiple businesses, which would promote industry transformations and upgrades.

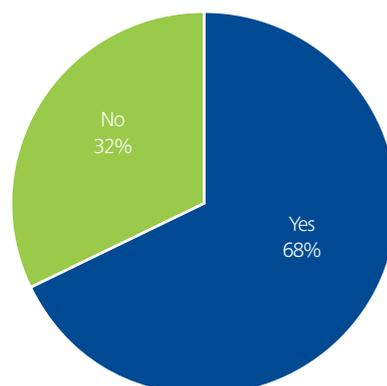
## 2. Transformation opportunities emerged from the volatile global economy for China's manufacturing industry

Along with the expansion of the Chinese economy, and considering its current role as a global production centre or market centre, China cannot completely insulate itself from global economic turmoil. During the financial crisis in 2008, China's manufacturing was unavoidably impacted, due mainly to its strong dependence on export markets and consignment-based manufacturing.

In a recent survey conducted by Deloitte, 68% of executives indicated that their enterprises had been affected during the financial crisis (Fig. 3). Given that this survey included enterprises in various industries and different types of corporations, it reveals that not only export-oriented enterprises suffered from the crisis, but also that import-oriented enterprises suffered due to shrinking demands in the domestic market and reduction in availability of funds.

Due to the impact of the financial crisis since the third quarter of 2008, the growth rate of China's scale industrial enterprises dropped from 16% in mid-2008 to 3.8% in early 2009. To manage the sudden drop in growth, the Chinese government launched a series of economic policies to guarantee growth, expanding domestic demands and adjusting the structure. These

**Fig. 3: Affected Chinese manufacturing enterprises during the financial crisis in 2008**

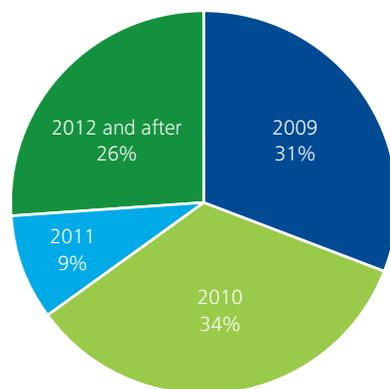


Source: Deloitte China Manufacturing Competitiveness Study 2011

policies included a stimulus package of RMB 4 trillion and plenty of measures for adjustment and revitalization of the 10 major industries, stopping the downward trend of the industrial economy. The growth rate of scale industrial enterprises was restored to double digits in June 2009, reaching 19.2% in November 2009, 11% in full-year 2009, and 15.7% in 2010. Chinese industry gradually recovered from the financial crisis.

According to the findings from the Deloitte's survey conducted with 150 manufacturing enterprises, due to the government's stimulus plan, 31% of the enterprises restored their production level before crisis; while 34% of the enterprises recovered in 2010.

**Fig. 4: Timeline for China's manufacturing enterprises' recovery from the financial crisis**



Source: Deloitte China Manufacturing Competitiveness Study 2011

The Chinese government's economic stimulus policies have produced marked effects since implementation in 2008, demonstrating the capability of the government to allocated needed resources to a major task. At the same time however, we also find that the infrastructure-focused stimulus plan has led to large sums of capital flowing into state owned enterprises, with limited assistance going to private enterprises.

The bailout has also brought some adverse impacts to the Chinese economy, including high inflation, real estate bubbles, and rising local debt. For manufacturing sectors that already have a problem with overcapacity, accelerated capacity expansion under the stimulus package further shrank industry profits.

There are also many external challenges, including sluggish global demand, a still-weak financial system, public debts, and narrowing space for the US and European macro policies, which have contributed to a gloomy global economy. The impact from recent issues, such as the US debt-ceiling and European sovereign debt crisis remain, which will affect some export-oriented enterprises and foreign trade related industries, and increase the risk of structural fluctuation in the Chinese economy. Given the slowing growth of the global economy and waning investor confidence, the Chinese government is focusing on expanding domestic demand, to promote the growth and transformation of the current economic structure.

History has demonstrated that economic crisis triggers significant change in science and technology, and results in structural adjustment within industries to drive the development of the manufacturing industry. This can be illustrated by the industrial structural transformation and improvements after historical events, i.e. the US Great Depression in the 1930s and the Japan's Oil Crisis in the 1970s. China is ushering in opportunities for a transformation in manufacturing: emerging sectors are strongly backed by policies and are opening up to enterprises with different types of ownership; requirements in overseas acquisition of technologies and brands have been eased; the costs for competitive enterprises to acquire backward ones has decreased; and requirements in corporate internal management have increased. China's manufacturing industry should turn the current financial crisis into opportunity, and leverage the upcoming new round of global industrial revolution to realize the transformation and upgrading, and enhance the competitiveness for the next growth.

### 3. China's competitive edges over other Asian countries in manufacturing

As mentioned above, the focus of global manufacturing is moving towards emerging economies, in particular, Asia. Can China's manufacturing industry maintain its significant edges over other Asian countries amid rising labor cost and RMB appreciation?

According to our comparison of various factors, the overall environment for China's manufacturing industry remain strong. The comparison looked at factors including fixed cost investment, supply of supporting resources, physical infrastructures, senior technical labor, quality and availability of labor force and government focus science & technology development and project investment, which are influential to the fundamental environment for manufacturing in China and across Asia (Table 1). China is "generally competitive" to "relatively strong" in most aspects considered, and though it continues to face challenges in some areas, its supply of raw materials and physical infrastructure, among various other factors, create an environment for continued growth.

The results of Deloitte's survey show that, 53% of the enterprises held that China was in a definite advantageous position in Asia. It is mainly attributable to its huge potential in market development, while continuous increasing domestic demands may well satisfy the needs for the development of manufacturing industry. If China's manufacturing can make use of the existing advantages, and further strengthen the combination of the labor force, technology, capital and market, its competitiveness will definitely be enormously enhanced.

The information in Table 1 can be resolved down to three major and connected sets of factors: (1) market and supply conditions; (2) policies and regulations; and (3) talent. All are highly contingent on state of development and the impact of globalization. The data is consistent with the global value chain positioning of the economies compared.

**Table 1: Comparison of environment for growth of manufacturing industry in representative Asian countries**

Regional Difference	Countries	Conditions in market and supply				Talents		Policies and regulations			
		Fixed costs (raw materials, land)	Wages for labors	Supply of parts and other supporting resources	Physical infrastructure	Quality and availability of labor force	Number of qualified senior technical talents	Tertiary education level	Complexity of tax system and the compliance costs	Intellectual property protection	Government's support in science & technology and project investment
Scale & efficiency	China	3.5	3.2	3.8	3.7	3.2	3.3	3.4	3.1	2.9	3.5
Brand & technology	Japan	3.1	3.3	3.9	4.3	4.3	4.3	4.4	3.8	4.4	4.3
	South Korea	3.4	3.3	3.8	3.9	3.8	3.9	4.0	3.7	4.3	4.1
IT industry-dominated	India	4.2	4.1	2.9	2.7	2.8	3.3	3.1	3.0	3.1	3.2
Emerging industries	Thailand	3.8	4.3	3.5	3.5	3.8	2.8	2.4	3.3	2.6	2.6
	Vietnam	3.7	4.1	3.2	2.7	2.8	2.7	2.5	3.3	2.0	2.7
	Indonesia	3.8	3.8	3.0	3.2	3.0	3.0	2.8	3.5	2.8	2.8

Source : Deloitte China Manufacturing Competitiveness Study 2011  
(1=poor, 2=relatively poor, 3=general competitive, 4=relatively strong, 5=highly competitive )

Regarding the conditions for market and supply, especially supply of supporting resources and physical infrastructure, China is highly competitive. However, there is also an urge for the country to enhance its strength in intellectual property protection. Such improvements are expected as China's manufacturing industry extends towards high-end products in the value chain. Development of the manufacturing industry in Japan and South Korea is based on values created through technology and branding. Similarly, Japan and South Korea track well with each other; both are at the lower edge of labor cost competitiveness, but strongly competitive in intangible infrastructure related to workforce quality and overall business environment. Although India is competitive in wages and material costs, its weakness in labor quality and supply chain at present positions India as a competitive manufacturer at the low, labor intensive, assembly end of supply chains and sourcing categories. With large amount of talents in science and engineering areas, in addition to high proficiency in English, India has an advantage mainly in IT sectors, including manufacturing and services. Thailand, Vietnam and some Southeast Asian countries are regarded as emerging manufacturing bases with low costs. However, these enterprises have limited ability to scale up production. Moreover, development of infrastructure and supporting resources in these countries still remain in the early stage.

In China, wage levels post-reform are broadly detached from those pre-reform because of three decades of sustained reform and globalization. As a result, wage rates are a major concern in terms of China's competitiveness. But actually the era of hyper wage inflation is relatively recent. Accelerated wage increases have a brief but intense history, with strong geographic correlates, and this has fueled the perception of China as losing its wage competitiveness. As shown in the data, the competitiveness of China's labor cost is even slightly lower than that of Japan. Our interview showed that from the enterprises' perspective, labor cost is not simply linked to wage level, but also the output rate of investment in labor force.

Deloitte's survey indicates that the tax burden, both rates and compliance administration costs, are increasing across Asia, as reflected by respondents. China and India are least competitive in terms of complexity and compliance cost within the tax system.

For China, the analysis tells us where China can look to improve and sustain competitiveness. There is a perceived need for improvement and simplification of tax and intellectual property protection, and a need to balance the wage increases with productivity gains as well.

For the region as a whole, the data reveals that the specific competitive differences across South, Southeast, and East Asia are significant and material. That in turn suggests that as the region integrates its market and increases its production-sharing network, these differences may shape up as complementary strengths in the overall value chains, making them a formidable asset in sustaining the competitiveness of Asia as a whole.



# Chapter 2: Factors influencing the competitiveness of China's manufacturing industry

## 1. Drivers of the competitiveness in China's manufacturing industry

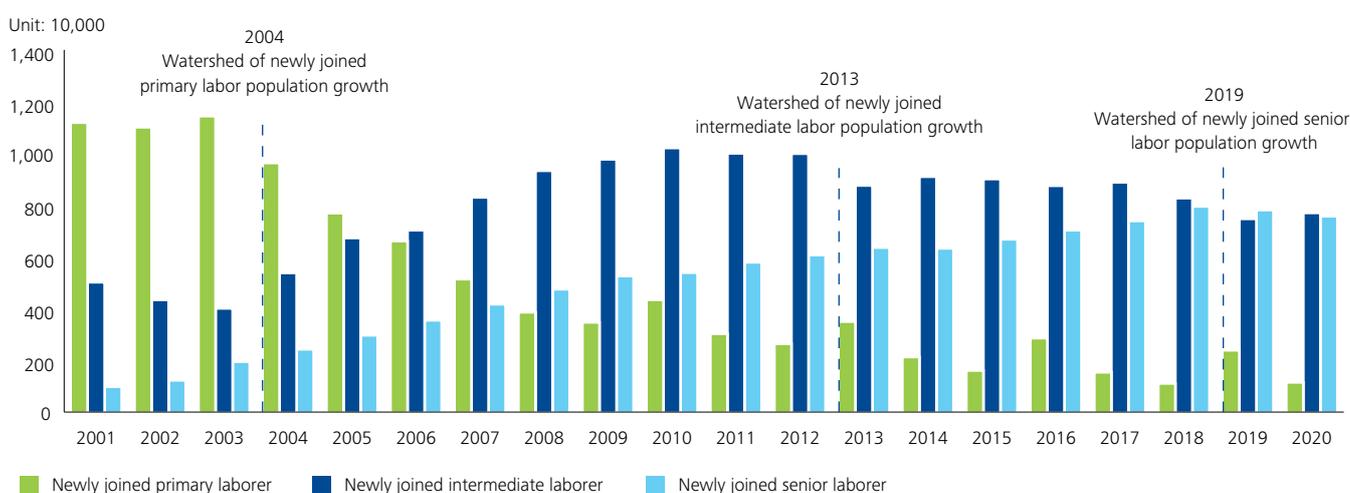
Based on research regarding actual conditions in China, we believe that the main drivers of competitiveness in China's manufacturing industry are labor resources conformed to the structural transformation of manufacturing industry, quality of infrastructure, the government's scheme for sustainable support to technical research and local business dynamics.

### Labor resources conformed to structural transformation of the manufacturing industry

Abundant labor resources have always been considered one of the key factors for the rapid development of the manufacturing industry in China. However, as population growth slows, whether labor resources can remain China's advantage in manufacturing has become controversial. According to our study, given the background for China to urgently improve its industrial sector, what has become increasingly important is whether China's labor resources can qualitatively and quantitatively satisfy the needs arising from structural changes in the industry.

After more than 30 years of development, the "Made in China" clothing, footwear, headgear, and other simple manufactured items have reached markets around the world. However, since the industry in China participates mainly in the processing and manufacturing stages of the industry chain, it fails to master the core technology, and lacks strength in branding and sales channels downstream. Therefore, China's manufacturing remains in a weak position in the global industrial chain, and ultimately receives the smallest share in profit distribution. Looking for improvements, manufacturing enterprises in China have taken the initiative to develop capacity upstream and downstream of the industry chain. These enterprises require a large number of workers with higher education levels during such development, for innovation and fundamental support. In the next decade, China will supply around 15 to 16 million workers every year at the senior secondary level or above. Additionally, there are around 6 to 8 million tertiary graduates entering the labor force (Fig. 5). Between 2011 and 2020, there will be a total of 69 million workers at the tertiary level or above in China, a number equivalent to the total population of France.

**Fig. 5: Trends of labor population growth in China**



Newly joined primary labors: 16-year-old first-time laborers at junior secondary educational levels or below

Newly joined intermediate labors: 19-year-old first-time laborers at senior secondary educational or equivalent levels; but lower than tertiary or equivalent levels.

Newly joined senior labors: 22-year-old first-time laborers at tertiary or above educational levels.

Source: NBS, Ministry of Education, World Bank Group, United Nations Population Division and Deloitte China Manufacturing Competitiveness Study 2011

According to the timeline, there will be sustainable growth in the labor force at the tertiary or above level every year until 2019. The growth in the labor force of newly joined intermediate labor at the senior secondary level will peak in 2012. The size of the labor force at lower educational levels has been decreasing since 2004 (Fig. 5). We expect that in the next 10 years, industries with higher demand for labor quality, such as in information technology (IT), mechanical engineering, and chemical engineering, may enjoy a sufficient supply of labor at low cost. However, traditionally labor-intensive industries, such as clothing, footwear and headgear, and simple manufactured items, will suffer from problems aggravated by a shortage of labor and rising labor costs.

Our survey findings have also shown that the labor force in China is undergoing a structural transformation. Evaluation of the labor force in the seven major industries, shows that industries requiring higher quality of labor forces, such as chemical engineering & pharmacy, mechanical engineering & processing, and IT-related manufacturing, have given higher ratings to the quality and availability of labor forces in China; while the ratings from consumer products, building materials and other industries requiring large amount of primary labor force are comparatively low. The only exception is

the automobile industry, which has given a rather low rating, possibly related to the rapid growth of the industry in China in recent years and the surge in demand for experienced workers within a short period of time (Fig. 6).

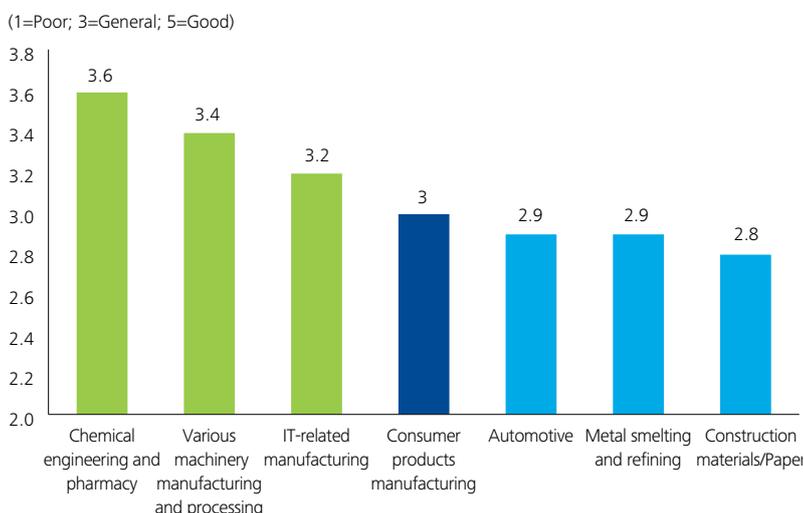
### Quality of Infrastructure

Industrial productivity in every country is closely related to infrastructure, including highways, railways, ports, aviation hubs, power facilities, water supply facilities and telecommunication networks. China has a sufficient power supply, highly developed highway and railway network, the world's largest port cargo volume, extensive coverage of communication networks, and a social system supporting the effective operation of this infrastructure; therefore, manufacturing enterprises in China have been provided with a favourable fundamental environment for investment.

Quality of infrastructure and comprehensive management of these facilities in a country are essential factors for a country's logistics sector. Therefore, logistic capability will be an alternative indicator for us to understand the overall quality of the infrastructure in the nation. Based on the Logistics Performance Index (LPI) organized by the World Bank Group, we have found out that, although the logistic performance in China is lower than the major developed industrial countries, China remains in a strong position among the BRICS and other major Asian countries with similar advantage in resources (Fig. 7). Additionally, according to our investigation, 56% of executives from manufacturing enterprises have a positive view on infrastructure development in China (Fig. 8).

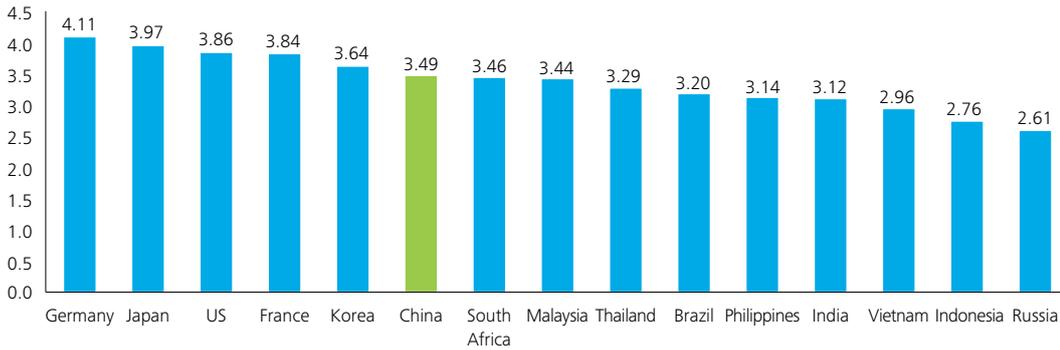
There is still increasing demand for infrastructure development as the Chinese economy continues its rapid growth. The government has correspondingly set up large-scale investment programs, including: continuous expansion of the railway network in China, which is already the largest of the kind around the world, to 120,000km by 2020; investment of RMB3.45 trillion in smart grid construction in the next decade; and construction of a 85,000km highway network by 2020.

**Fig. 6: Performance of China's labor quality and availability**



Source: Deloitte China Manufacturing Competitiveness Study 2011

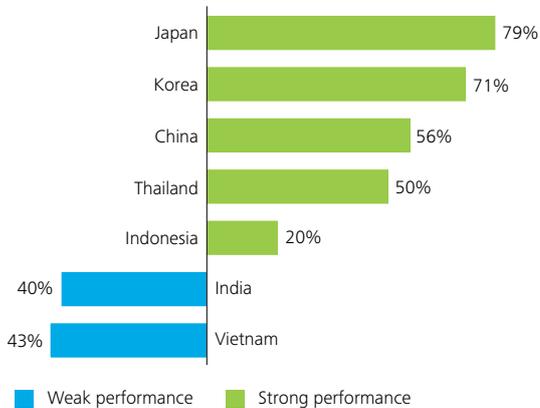
**Fig. 7: LPIs of major industrial countries, BRICS and major Asian countries**



Source: World Bank Group Statistics 2009

**Fig. 8: Physical infrastructure performance of various countries**

What is your impression of the physical infrastructure performance of various countries? (Strong/weak performance as indicated in percentage)



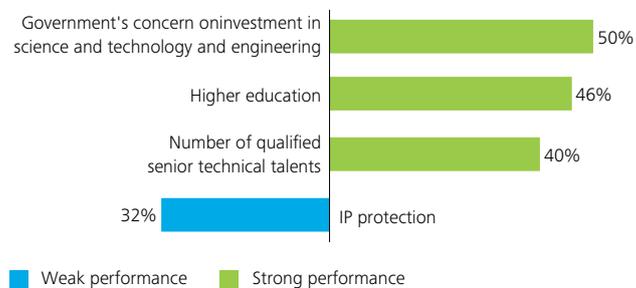
Source: Deloitte China Manufacturing Competitiveness Study 2011

**Government's planned and sustained support for R&D**

Nearly 50% of executives participating in the survey appreciated the government's policies supporting science and technology. However, they also expressed their concerns regarding the current situation of intellectual property protection in China. It seems to be contradictory. While people in Europe and the US have always believed that innovation in science and technology can only be promoted when intellectual property is under adequate protection, the Chinese government has, through careful planning, allowed for and encouraged development in science and technology, which has benefited from the stability

**Fig. 9: Performance of China's R&D capability, conditions and environment according to the survey**

What is your impression of China's capability, conditions and environment in R&D activities? (Strong/weak performance as indicated in percentage)



Source: Deloitte China Manufacturing Competitiveness Study 2011

and continuity of long-term development plans for science and technology, implemented by the Chinese authorities.

The Chinese government has framed a mid-to-long term development plan for science and technology extending to the year 2020. It has also stated phased development targets in the Five Year Plan ("FYP"). For example, the 10th FYP (2001-2005) and 11th FYP (2006-2010) stated that the "proportion of the costs in research and trial development in GDP" was 1.5% and 2% respectively; and that ultimately they are 1.3% and 1.75%. In the latest 12th FYP (2011-2015), the target has been set at 2.2%. According to data from the World Bank Group, in 1996, proportion of the costs in research and trial development in GDP in China was 0.57%, and this proportion has been increased steadily and sustainably since then.

Such a planned approach for innovation has been questioned, though the results so far have been satisfactory. As shown in statistics from the World Intellectual Property Organization, PCT (Patent Cooperation Treaty) applications from China have been growing rapidly since 2000, at a CAGR of 30%, which is higher than that of other major industrial countries. In 2010, PCT applications from China were 7.5% of the world total, which puts China at No. 4, following the US, Japan and Germany (Fig. 10). In addition, according to information published by the World Intellectual Property Organization, when looking at R&D efficiency as measured by patent applications per US\$1m in R&D costs, although China's R&D efficiency is lower than that of Japan and Korea, in 2007, the number of patent applications in China per US\$1m in R&D costs was 2.5 times that of the US.

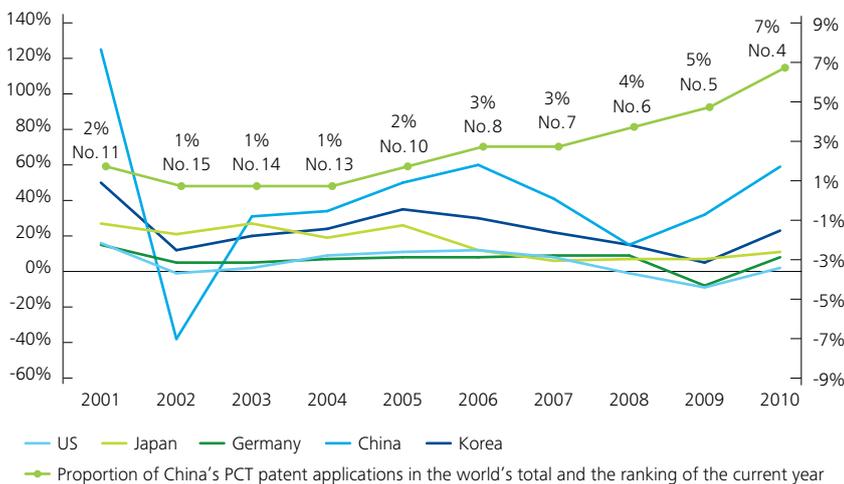
### Local business dynamics

According to a recent competitiveness survey of China's manufacturing industry conducted by Deloitte, almost all executives, indicated that the large, dynamic domestic market in China was the most important competitiveness of the industry, in response to the question: "What is the strongest core competitiveness of the industry overall."

In the last 30 years, China has experienced the most extensive urbanization in human history. Hundreds of millions of people have moved away from their traditional living and production modes, which had been passed down from generation to generation, and have moved into cities. Therefore, demand in housing, transportation, communication, education, entertainment and other human activities have provided an unprecedented market for China's manufacturing industry. For example, in 1999, China's automobile industry had an output of 1.8 million vehicles, ranking No. 9 in the world, but production reached 18 million in 2010, ranking No.1. Moreover, of the 18 million automobiles produced, 97% were purchased by Chinese consumers, who had become wealthier, and only 3% were exported. Large-scale urbanization makes it possible for all kinds of products to find their market niches in China. From the most advanced technological products to the most general daily consumer products, China's market demand seems limitless.

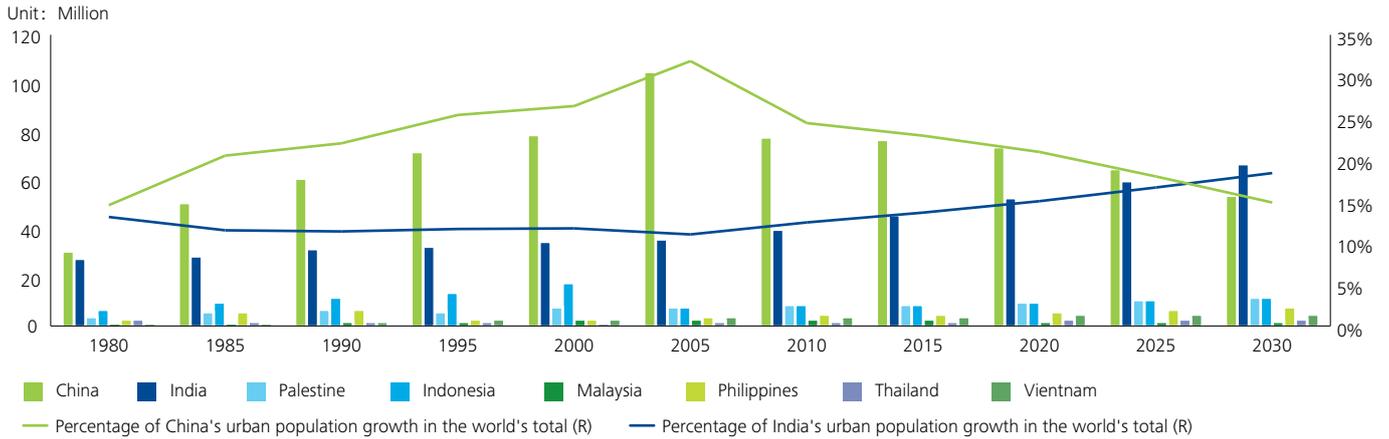
Based on analysis of the progress of urbanization in China, we believe that China will maintain such an advantage in the coming 20 years. According to an urbanization report from the United Nations, urban population growth in China has ranked the top in the world for the last 30 years. Between 2000 and 2005, urban population growth reached a peak of 105 million, with average annual growth of 20 million, which was around 32% of the world's total. Between 2006 and 2010, China's urban population growth stabilized at around 15 million per year, which was around 24% of the world's total, and still remained at No.1 in the world. In the coming ten years, China's urban population growth will remain stable until 2025 when it will begin to slowly decrease (Fig. 11).

**Fig. 10: Growth of PCT applications from China and other major countries**



Source: World Intellectual Property Organization

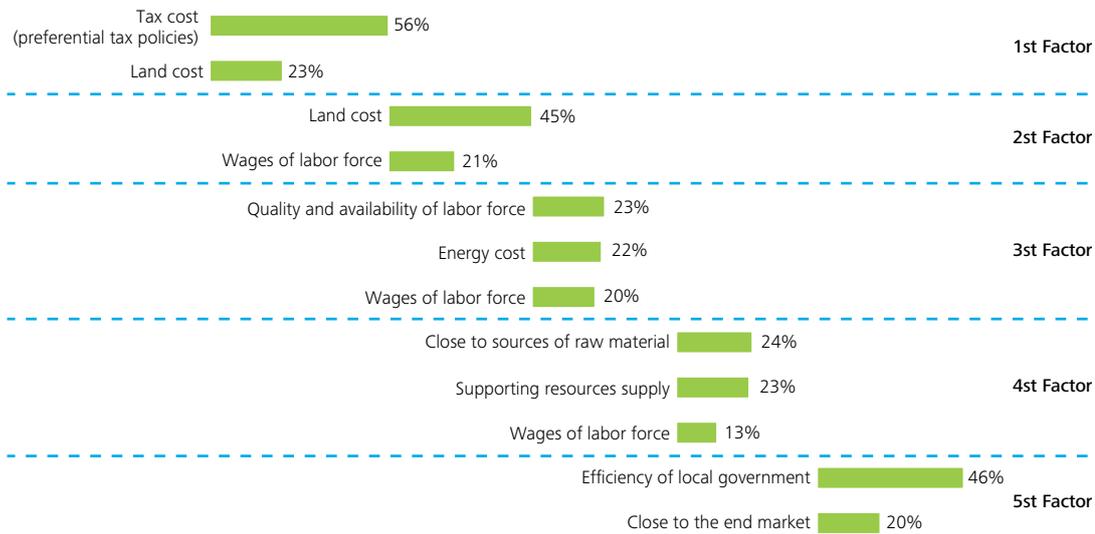
**Fig. 11: Comparison and forecast of urban population growth in China and certain Asian countries**



Noted: Data refers to the total of net population growth in 5 years  
 Source: United Nations Population Division (World Urbanization Prospects), the 2009 revision

**Fig. 12: Primary factors in site selection for new factories according to the survey**

What are the most important factors when your company doing site selection for new plants?  
 (Candidates may choose up to 5 factors and rank them by importance. Percentage below indicates the no. of candidates who have chosen the factor)



Source: Deloitte China Manufacturing Competitiveness Study 2011

## 2. Issues against the growth of manufacturing industry in China

While the manufacturing enterprises in China enjoy a competitive edge, they also face multiple challenges and pressures. There are challenges when working towards market expansion, caused by an underdeveloped business environment. The to-be-improved policy environment also imposes additional cost pressure on enterprises. Various internal reform needs arise along with the enterprise's growth. By summarizing and analysing the survey results, we noted that the greatest current concerns of manufacturing enterprises in China are the tax burden, domestic market expansion, intellectual property protection, and improving internal operation.

### Tax burden: the most critical cost issue for manufacturers

When asked about their primary factors for consideration when selecting sites for new plants, nearly 56% of the executives said tax cost (Fig. 12), followed by other factors in relation to production and sales, such as land, labor force, raw materials and market. This indicates that

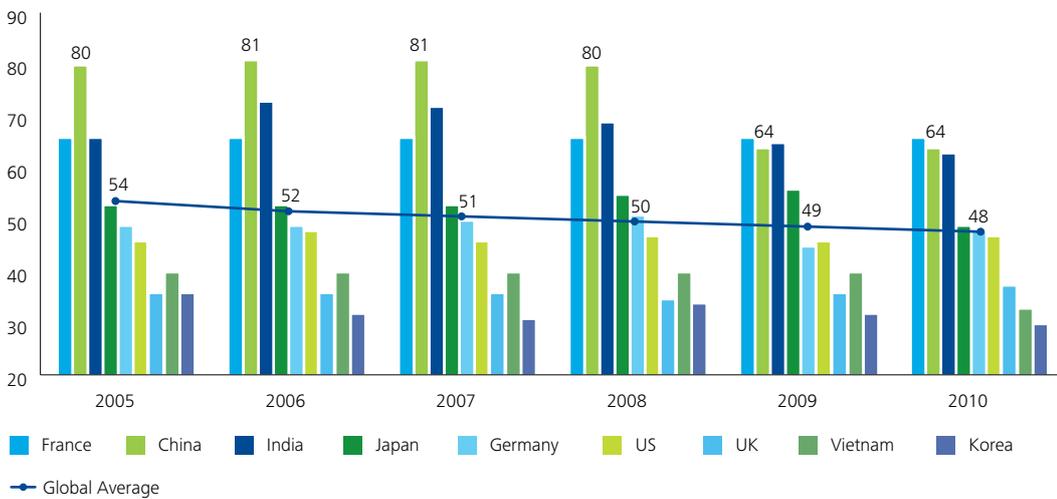
government taxation has imposed greater pressure on composite costs to companies than their own operational costs.

According to data from the World Bank Group, China's composite tax burden ranked 31st among the documented 209 countries and regions in the survey. It has also indicated that China is among the top 15% of countries with heaviest taxation. Among major industrial countries, China's tax burden is ranked after France, but above that of the other countries (Fig. 13).

Currently, China's manufacturing industry is attempting to shift towards the high-end of the global value chain. During this transition, Chinese enterprises have to invest large sums of capital into technological innovation and market expansion. Although government taxation encourages companies to invest in R&D and innovation areas, most of the companies expressed that such a heavy tax burden has restricted their investment capacity in the above two areas to a certain extent, and therefore has affected their development.

**Fig. 13: Composite tax burdens in China, other major industrial countries and Asian countries**

(The figures indicated the ratio of composite tax burdens to corporate net profit; Unit: %)



Source: World Bank Group

**Export companies in China experience various obstacles during domestic markets exploration**

Exports of Chinese enterprises sustained a heavy blow after the 2008 global financial crisis; therefore both the enterprises and the government began to stress the domestic markets. According to our survey, 90% of export companies considered redirecting their target to the domestic market; however, most of the companies remained doubtful when exploring domestic market. After summarizing findings and feedbacks, we found that the greatest obstacle to Chinese companies exploring domestic market is relating to the product itself (39%), while two other key problems are the domestic market environment and the government policy environment, which were 30% and 23% respectively (Fig 14).

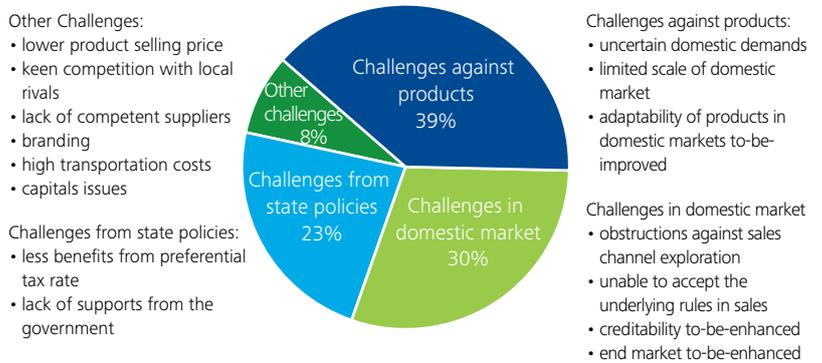
**Underdeveloped environment for intellectual property protection**

Despite successful achievements in technology development, protection of intellectual property remains a crucial issue, and is in need of government attention. For nearly 30 years, Chinese economic growth has been largely dependant on quantitative rapid growth. After the peak of urbanization in China, enhancement of the overall productivity will become more and more dependent on quality technologies and innovation. As the foundation of technological innovation, intellectual property protection is critical for the future development of manufacturing industry in China.

According to our survey, there is general ambivalence regarding the current environment of intellectual property protection in China. While respondents support the legislation in relation to intellectual property protection in China, they also have little confidence in its practice (Fig. 15). This may indicate that, being aware of the importance of intellectual property protection, Chinese government has already laid down detailed laws, but this has not relieved companies' concerns regarding the effectiveness of intellectual property protection in practice.

**Fig. 14: The greatest challenges against companies in transition from overseas market to domestic market**

During the transition from overseas market to domestic market, what are the greatest challenges that your company has encountered? (Candidates may choose up to 5 factors and rank them by importance. Percentage below indicates the no. of candidates who have chosen the factor)



Source: Deloitte China Manufacturing Competitiveness Study 2011

**Fig. 15: Manufacturers' evaluation on the environment for intellectual property in China**

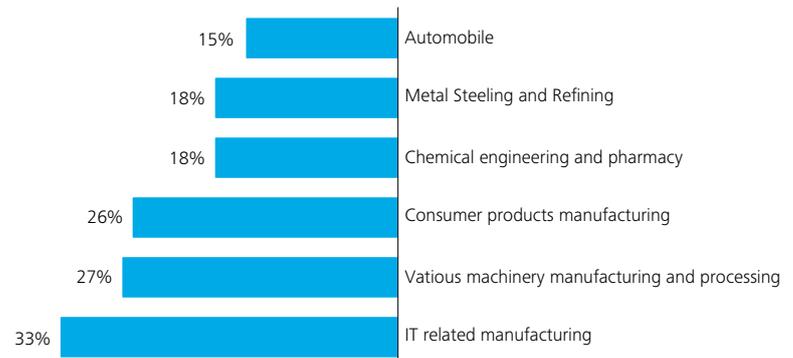
(Strong/weak performance as indicated in percentage)



Source: Deloitte China Manufacturing Competitiveness Study 2011

**Fig. 16: Evaluations from various sectors on IP protection practice in China**

(Weak performance as indicated in percentage)



Source: Deloitte China Manufacturing Competitiveness Study 2011

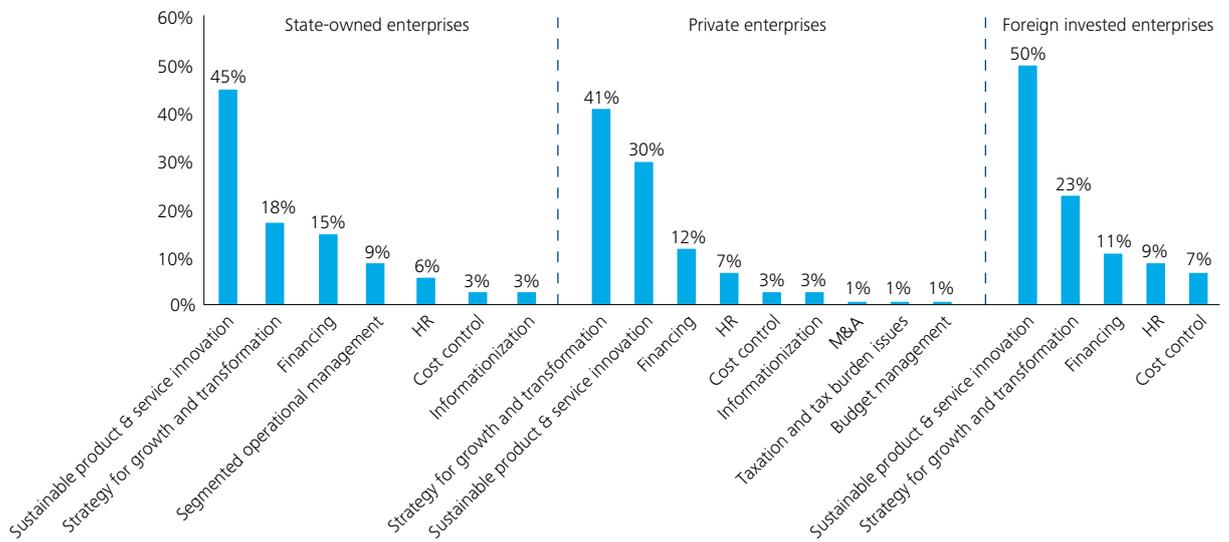
Based on the interviews, although foreign-invested companies have a strong desire to bring more technology into China, they have serious concerns regarding the state of intellectual property protection in China. They are worried that local competitors will have the capability to reproduce their technology, and are concerned as to whether local partners would maintain their commitments for long-term mutual benefit after they have obtained the technology.

**Multiple challenges against corporate internal operation**

In the survey, we particularly focused on major issues in corporate management and development faced by manufacturers in China. The survey

results show that companies with different types of ownership may face different challenges. While the top issue for private enterprises is promoting growth, other manufacturers, both state-owned enterprises and foreign-invested enterprises, are most concerned with how to achieve sustainable product and service innovation (Fig. 17). One possible reason for this difference could be that most private companies in China are still in the early stage, where survival of the business remains the first priority. Larger companies, on the other hand, face strong competition, with product homogenization resulting in falling profits. Therefore, sustainable product and service innovation and development of new market segments are key to competitiveness.

**Fig. 17: The top challenge against the enterprises (by ownership type)**

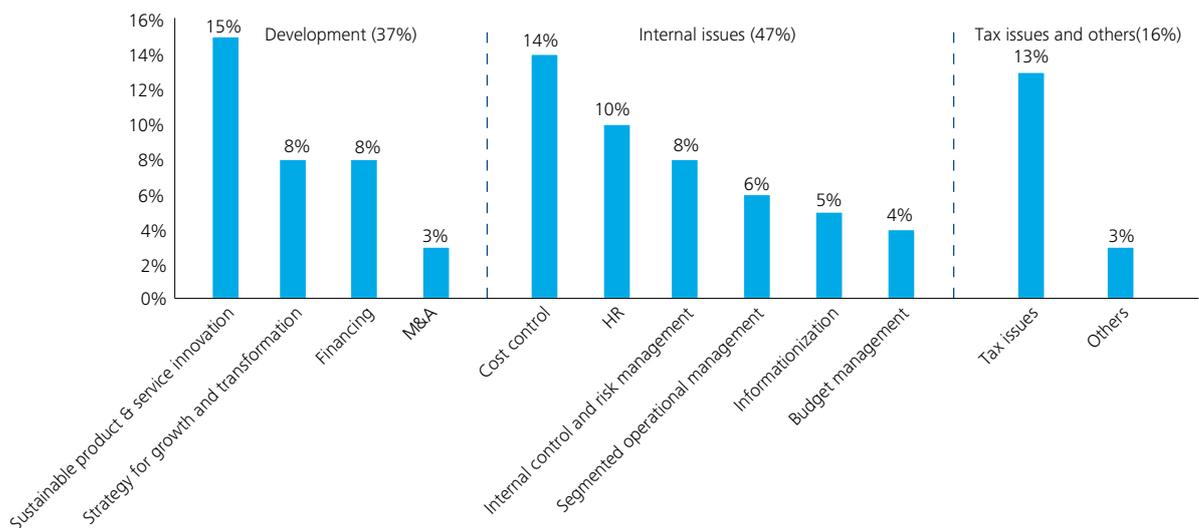


Source: Deloitte China Manufacturing Competitiveness Study 2011

Looking at top challenges facing companies, by nature of issue, the survey data shows that 47% of challenges are relating with internal management (Fig. 18). Under the background of rapid industry growth in China, many Chinese manufacturers also have been embarking on continuous expansion of the companies' size and increasing exploration in overseas markets, which caused great pressure on the companies' internal management resources. Therefore, the surveyed executives are eager to equip themselves with skills in how to effectively impose cost control, talent management and internal risk control.

**Fig. 18: Top challenges against the enterprises (by nature of issues)**

With China's manufacturing undergoing industrial structural adjustment, what are the major challenges that your company is facing with? (Candidates may choose up to 5 factors. Percentage below indicates the frequency with the factor being chosen against the that of all factors.)



Source: Deloitte China Manufacturing Competitiveness Study 2011

# Chapter 3: Where is China manufacturing industry going?

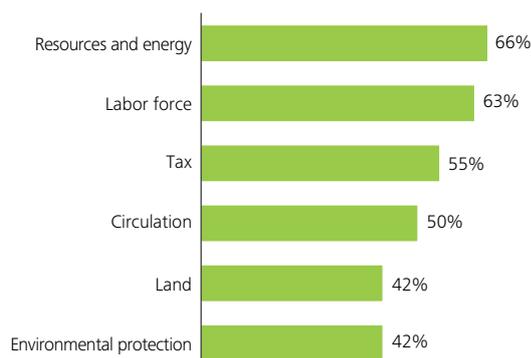
## 1. Upcoming of strategic transformations in China's manufacturing industry

### China's low-cost edge is challenged

Looking at the historic development of China's manufacturing sector, its growth was initially based on a low-cost strategy. With "Made in China" products exported to countries around the world, the Chinese economy maintained a vast trade surplus. However, appreciation of the RMB against the USD and increasing global resource prices have weakened the low-cost edge of China's manufacturing industry. Recently, the Chinese government proposed increasing the average wages of Chinese labor by over 80% by 2015. This will, to certain extent, reduce the competitiveness of labor-intensive sectors of the economy; especially, given that the average wage in some Southeast Asian countries is only about 50% of the average wage in China. Many multinational companies planned to cut their purchase in China, and move processing of labor-intensive manufacturing businesses, such as clothing, footwear and headgear manufacturing, to Southeast Asia.

Currently, in the knowledge intensive industry, 'Made in China' still has a higher cost performance, especially in certain machinery manufacturing, electronics and communications, wind power equipment, and other manufacturing sectors. However, as far as core technology and patents, China remains in a passive role. China's leading edge in manufacturing, which has long been dependent on its low-cost advantage, will be challenged in future competition for progress of science and technology.

**Fig. 19: Proportion of impacts on Chinese enterprises from different costs**



Source: Deloitte China Manufacturing Competitiveness Study 2011

### Insist on industry strategic transformation led by technological innovation

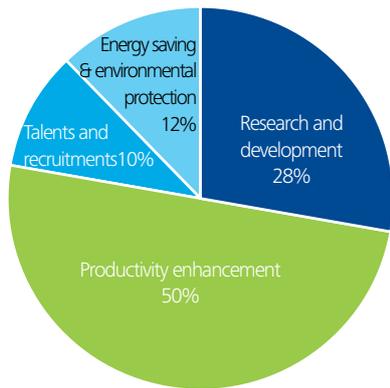
Since the low-cost strategy of the industry is losing its edge, China has to disentangle itself from low-cost product competition and begin focusing its industrial development on technological innovation and differentiation.

In 2006, the Chinese government put forward its objective to establish a new innovation-oriented country, and further stated the requirements to realize industrial structural upgrade in the 12th FYP. In reality however, according to our findings from the survey, there is a gap between government's objective and the execution by the enterprises.

While the number of applications of PCT from Chinese companies continues to increase, the distribution of patent applicants is extremely uneven. According to the data from the World Intellectual Property Organization, in 2010, the number of patents applied for by the two companies with the largest number of applications was 30% of total applications, while the company ranked 3rd only applied for 1% of the total. During the same period, the top 10 companies in the US only applied for 12% of the total PCT applications in the country. Excepting Qualcomm, which applied for 4% of the total, each of the other 9 companies only applied for around 1%. Currently, technological innovation in China is still concentrated in few companies in few sectors, and is not yet widespread.

The government has set a series of objectives for industrial development, proposed independent innovation, and urged the large enterprises to invest in R&D for up to 3% of sales. However, in execution, large manufacturing enterprises do not have specific objective assessments on the effectiveness of their R&D investment. During interviews with executives, we found that some of the companies simply spend the R&D funds to acquire prototypes and conduct peripheral testing; and spend very little on core technology or real innovation. Therefore the R&D effectiveness and technical transfer rate in these companies remains very low.

**Fig. 20 : Planned investments in the next 3-5 years by manufacturing enterprises in China**



Source: Deloitte China Manufacturing Competitiveness Study 2011

**Manufacturing enterprises need innovation, as does the industrial value chain**

To prepare for future global competition, China's manufacturing industry should not only achieve technological innovation in individual enterprises but should also enhance the organisation and integration of downstream and upstream businesses in the industrial chain, i.e. realising innovation across the entire industrial chain. For example, in the automotive industry, success is usually due more to innovation in areas like engines, gearboxes, and automobile electronics than OEM itself. Only with well-integrated innovation efforts across the entire value chain can the overall development of the sector be realized.

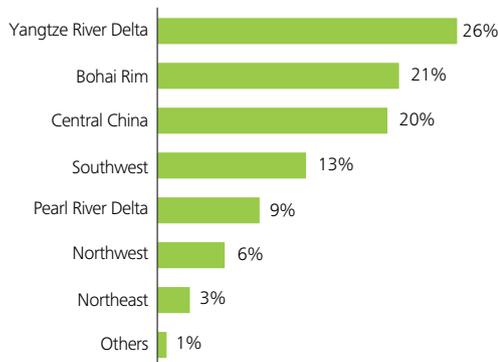
Currently, China lags far behind developed countries in the coupling degree of the manufacturing industry chain and synergy of R&D system and innovation mechanism.

**2.The significance of Yangtze River Delta for China's manufacturing will be further enhanced**

Although the Chinese government has proposed a strategy to develop the central and western areas, our survey showed that more companies are still willing to expand their businesses in the eastern region with prosperous markets.

According to the survey result, companies prefer setting up new plants in the Yangtze River Delta (Fig. 21), followed by the Bohai Rim and Central China. During interviews with executives, they praised the business environment in the eastern region. In their opinion, the Yangtze River Delta possessed high quality infrastructure, convenient logistics systems, complete supporting ability, and a favourable business environment. It still has an advantage even in labor costs as compared to certain western provinces. The Bohai Rim and Central China excel in solid logistics foundation and talent reserve and both receive policy support from the Central Government. In contrast, the Pearl River Delta, which had once driven the development of China's manufacturing industry, has become less attractive and is ranked below the southwest regions.

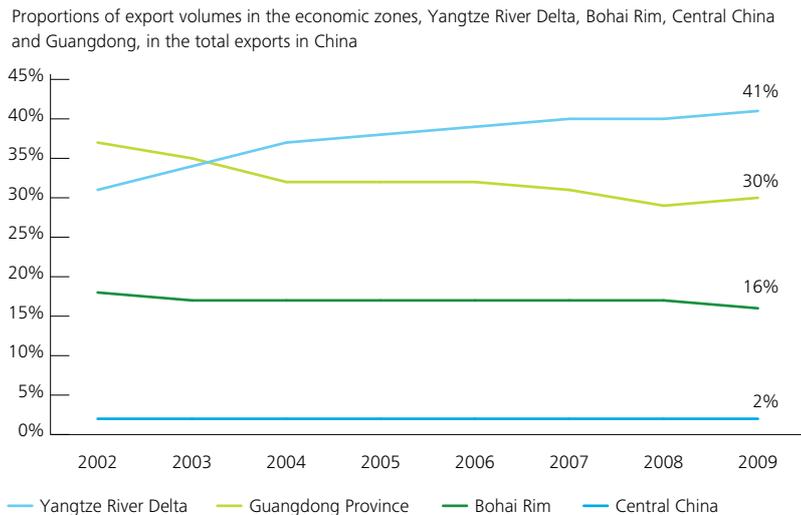
**Fig. 21: Preferred sites for new plants of the enterprises**



Source: Deloitte China Manufacturing Competitiveness Study 2011

Since 93.6% of exports in China are products from manufacturing industry, variation in export volumes from different regions in China may, to certain extent, demonstrate the development trend of the core of the industry. Since 2003, the percent of export volume in Guangdong to the national total has trended downwards year-over-year, while that in the Yangtze River Delta has recorded an annual growth of 1% and now stands at 41% (Fig. 22).

**Fig. 22: Proportions of export volumes in different economic zones in the total exports in China**



Yangtze River Delta regions include: Shanghai City, Jiangsu Province, Zhejiang Province  
 Bohai Rim regions include: Beijing City, Tianjin City, Hebei Province, Liaoning Province, Shandong Province  
 Central China regions include: Henan Province, Hubei Province, Henan Province

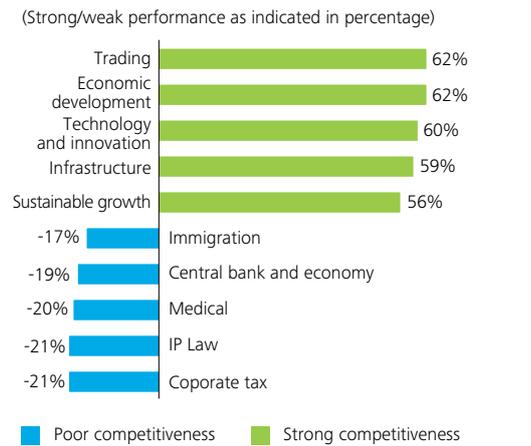
Source: National Bureau of Statistics of China

### 3. China's 12<sup>th</sup> Five-Year-Plan proposed a new direction for the development of manufacturing industry

#### State policies continue to promote development of manufacturing industry in China

Since the Chinese government plays a vital role in enhancing the competitiveness of the country, we investigated the opinions from the executives of manufacturing enterprises on the state policies. Nearly 70% of respondents commented that supporting state policy is the key driving force to development of the industry; 62% of them believed that policies in trading and economic development in China have positive impacts on the development of the industry, followed by supports in technology and innovation, infrastructural investments, and economic strategy for sustainable development. However, 21% of the respondents believed that there is room for improvement in corporate tax policy and legislation on intellectual property protection, which led manufacturing enterprises to a weak position in the competition (Fig. 23).

**Fig. 23 Impacts on competitiveness of manufacturing industry from the state policies**



Source: Deloitte China Manufacturing Competitiveness Study 2011

#### Seven strategic emerging industries – the new direction

Countries around the world are all seeking the driving force for the next round of economic growth and have begun to pay great attention to the cultivation of strategic emerging industries, which are vital to national economic development and security. The US Obama administration has strongly emphasized development of technology and industrial development in new energy, stem cells, aerospace and broadband network. Japan has put the emphasis on commercial aerospace market, IT application, new energy vehicles, low-carbon industry, medical and nursing, new energy and other emerging industries.

The Chinese government has clearly stated in the 12th FYP, that energy saving and environmental protection, new generations of IT technology, biotechnology, high-end equipment manufacturing, new energy, new materials, new energy vehicles are the seven strategic emerging industries of the country (Table 2). Also it is proposed in the Decision of the State Council on Accelerating the Fostering and Development of Strategic Emerging Industries, by 2015, growth of the seven major strategic emerging industries will be around 8% of the GDP, and will be around 15% by 2020; which will then increase the demand for employment and drive the growth of employment rate.

The seven strategic emerging industries themselves are indeed the new direction for manufacturing industry development proposed by the state. Both the pillar industries, including energy efficiency and environment protection, new generations of information technology, biotechnology and advanced equipment manufacturing; or leading industries, which are new energy, new materials and new energy automobiles, are closely related to the industrial chain in manufacturing. Also they are new directions in which to upgrade and develop the manufacturing industry. Whether the development of these seven industries is successful will be one of the decision factors for China to transform from a manufacturing giant to a manufacturing power.

### Further integrate into the global economic system

With intensified economic globalisation, the Chinese government proposed in the 12th FYP that it would "further strengthen the international competitiveness of Chinese enterprises, optimize product exportation structure and leverage foreign funds and merge into the global economic system." It is clear that the Chinese government will advocate for the two points, to facilitate globalization in the next 5 years.

**Industrial Transition.** This means shifting out of labour-intensive and low-added-value industries to low costs countries while bringing in capital and technology intensive industries from developed countries. In our survey, nearly 12% of the enterprises show their intent to invest in countries

**Table 2: Investments and market sizes in the strategic emerging industries in China**

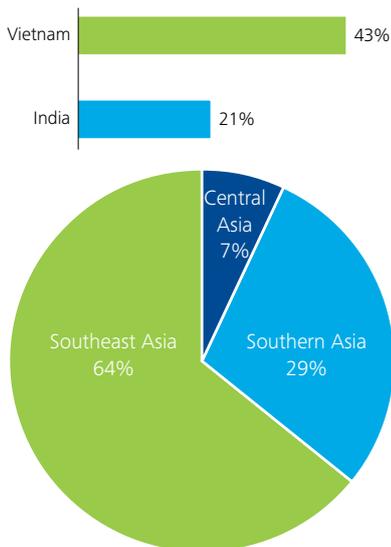
Industry	Sub-sectors	Estimated investments	Market sizes
<b>Energy saving and environment protection</b>	Building energy saving, wastes disposals, environment protection and smart grid etc.	RMB3.1tn	RMB 2tn
<b>New generation of information technology</b>	Tri-networks integration, IOT/sensor network, new generation of telecommunication network, high-performance integrated circuit and cloud computing etc.	RMB 1tn	IOT: RMB 750bn Cloud computing: 750bn – 1tn
<b>Biotechnology</b>	New medicines, biomedical technology, advanced medical equipment, biological breeding, stem cells and genetic modification etc.	--	General biological industry by 2020: around RMB 6tn
<b>High-end equipment manufacturing</b>	Intelligent equipment, advanced power equipment, aerospace, marine engineering and advanced transportation facilities etc.	RMB 1.5tn	Above RMB 6tn by 2015, over 20% of equipment manufacturing
<b>New energy</b>	Nuclear power, wind power, solar energy, clean coal, biomass energy, clean coal & smart grid, distributed power consumption and new energy for vehicles etc.	RMB 5tn by 2020	RMB 1tn by 2020
<b>New materials</b>	Materials with specific functions, high-performance composites, new chemical materials and nano materials etc.	RMB 750bn	Over RMB 130bn by 2012, over RMB 200bn by 2015
<b>New energy vehicles</b>	Electrical automobile, hybrid automobile, hydrogen-powered vehicles, battery charging equipment, lithium battery and parts for new energy automobiles	RMB 1tn by 2020	Over RMB 20bn by 2020

Source: Deloitte Research Centre: China Strategic Emerging Industries Development and Financial Policies issued in December 2010

like Vietnam, India, Cambodia and Indonesia with lower labour cost, and Vietnam is the most favoured destination (Fig. 24). From the sector's perspective, companies in consumer products manufacturing (textile/ clothing/ footwear/ headgear etc.) have a stronger desire to make overseas investments, with 20% of them having plans to invest overseas and set up offshore plants.

**Fig. 24: Companies' preferred locations for outsourcing or moving**

Other Asian countries where manufacturing companies have planned to outsource or move the plants to these locations in the coming 3-5 years



Source: Deloitte China Manufacturing Competitiveness Study 2011

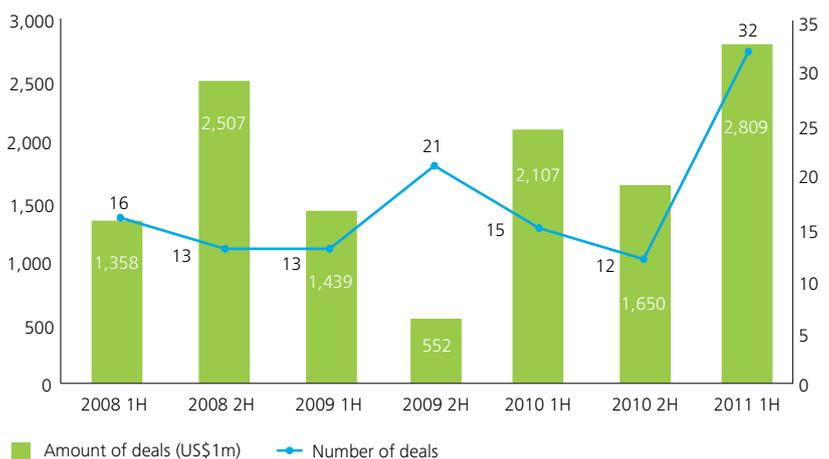
Labor cost is a key component in consumer goods manufacturing costs, and currently, labor costs in certain Southeast Asian countries is only about half of that in China. Considering RMB appreciation and the decreasing availability of primary labor forces, which is partly caused by the common need for low-cost labor from other industries like the service industry, certain low-technological consumer product manufacturing have moved to other emerging countries. We believe that and such trends will become increasingly noticeable.

**Strengthen capital utilization.** This is mainly to support Chinese companies' cross-border investment in machinery, ships & ports, railway, and other industries. Currently, many financially

sound enterprises in China can enter the international market, and acquire technology, brands, and sales channels around the world. Furthermore, with the RMB playing an increasingly important role in the global market, China's manufacturing enterprises' purchasing power in overseas acquisitions is expected to become even stronger. According to Dealogic, a consulting organization from London, between 2003 and 2005, Chinese enterprises invested US\$853 million in Europe; this figure climbed to US\$43.9 billion between 2008 and 2010. Currently, overseas M&A conducted by private companies in China has gradually become a new highlight: Geely acquired Volvo at US\$1.8 billion, which has explored the way for acquisitions of European high-end brands by Chinese companies; as one of the flagship enterprises for machinery in China, SANY will become the first Chinese construction machinery company entering the German market, signalling that the fast-growing Chinese industrial enterprise has begun the march into Europe's machinery market.

China, as an economic power gradually moving from a developing country to a developed country, is establishing international leading enterprises by taking advantage of its own edges and historic opportunities, and will be key to its sustainable and rapid economic growth. In 2011, overseas M&A activities of Chinese enterprise will continue trending upward (Fig. 25).

**Fig. 25: Amount and number of overseas M&A deals in manufacturing industry in China**



Source: Thomson, Deloitte Research

#### **4. Operation excellence is essential to enhancing the competitiveness of China's manufacturing industry**

Among various challenges facing manufacturing enterprises in China, the major internal ones are product & service innovation, cost control, human resources, internal control, risk management, and financing etc. to deal with these challenges, Chinese manufacturing companies still have to make many changes in operation.

##### **Product & service innovation through in-depth exploration of market demands**

There are certain general ways to show the competitive edges of the companies, i.e. ensure competitive product price by cost edge; or create differentiation within the industry by innovation, achieve high profits by personalized products; or dominate certain specific market segment through innovation. The ultimate goal of innovation is to develop products and services meeting the market demands, and even create new market demands. Successful innovation depends on in-depth exploration of market demands.

Apple Inc. created market demand for PCs, smart phones and tablet PCs. With revolutionary products and powerful branding, users' desires for its products and services have far outweighed price sensitivity. Sony's core competency lies in product innovation, especially its capability in compact product development, which allows the company to dominate the market where consumers seek new products. Panasonic's core competency is its balance of quality and price; the company does not seek innovation, but aims to attract consumers through appropriate pricing of products. These examples show that during keen competition in the market, companies should have accurate an understanding of local market demands to take advantage of market opportunities. The QQ series of Chery Automobile Co. was developed based on an accurate understanding of demands from low-income and young consumers. It shows that one way for companies to succeed in China is to begin with low-end products and then develop high-end products through experience and innovation.

The large Chinese population varies widely across different regions, and is a huge local

market, which covers various demands from different classes and in different regions. China's manufacturing enterprises may want to explore more market segments in order to achieve corporate growth.

For example, Huawei, a leading Chinese high-tech manufacturing company located in Shenzhen, has sustained rapid growth of 30%-40% in the last 5 years and achieved revenue of RMB185.2 billion. As No. 1 in the Chinese market, the company has also been remarkably successful in the overseas market, especially in highly developed countries, and has become the second largest company in its industry worldwide. More importantly, its rate of growth was achieved without paying any price from the gross profits and cash flow. Huawei, well known as a company with good consumer understanding, has long been focusing on innovation and services that concentrate on value creation for customers to achieve a 'win-win' situation. When developing towards the frontier of the industry chain, Huawei achieved high-speed growth of gross profit and cash flow, which is even higher than its sales growth.

##### **Focus on core business, establish performance culture and enhance efficiency in manufacturing**

Enhancing efficiency requires companies to focus on improving competitiveness in their core business. Having not built the competitiveness in main business, many enterprises thoughtlessly pursue diversification operation and scatter resources across many different business sectors, which not only slows down the formulation of core competency, but also leads to the loss of some leading edges they once have possessed. At the same time, companies should position themselves for long-term development, instead of just short-term profit. Mid-to-long term development strategy will guide companies to pay more attention to brand establishment, talent cultivation, and investment in technology. These are the key factors in enhancing core competencies.

Efficiency enhancement also requires establishment of a dynamic corporate culture, in particular, a performance-oriented corporate culture. By establishing and perfecting evaluation and appraisal systems for company strategy,

human resources, finance, team building, etc., enterprises can establish an effective operational mechanism. This is characterised by simplified organizational structure, smooth operation flow, improved technique, enhanced work experience, improved professionalism, etc. to strengthen an enterprise's competitiveness in market. Additionally, standard of evaluations for corporate management should further emphasize on corporate growth and value creation, in order to motivate management to develop innovation and implement ideas.

#### **Clear strategy for corporate development and enhancing competitiveness through M&A**

M&A and restructuring are important ways for enterprises to strengthen their competitiveness. Brands, markets, resources and technologies are internal incentives for M&A. Successful M&A and restructuring helps enterprises achieve low-cost expansion and leap-frog development; at the same time, they are also significant in strategic transformation and to developing new competitive advantages.

Mittal Steel, through merging 136 small enterprises at risk and two acquisitions of world-class large enterprises in just ten odd years, has now grown into the largest steel company worldwide, ArcelorMittal M&A deals conducted by Mittal Steel are always guided by its objectives for overall strategic development and aimed at strengthening its competitive edge. It has undergone 3 strategic phases: low-cost expansion, technology-oriented development, and emerging market growth. By selecting appropriate M&A targets, controlling upstream raw materials, adopting flexible M&A strategies, and conducting effective mergers, etc., Mittal has successfully developed from a family business in India into the most globalised steel enterprise around the world in ten odd years.

China's manufacturing industry is experiencing a new wave of M&A activity. However, it should be noted that M&A is a complicated process involving economic, financial, legal, commercial, management and resource integration. A thorough understanding of the entire M&A cycle (from strategy formulation to M&A planning, facilitation, decision making, implementation and post-merger integration) is critical for Chinese enterprises. In

regard to operations, enterprises should consider the effectiveness of M&A activity in enhancing competitiveness, and should also consider how to conduct effective post-merger integration, based on their own development strategies. Enterprises need to do extensive research in M&A cases and accumulate practical experience to be well prepared for M&A opportunities and increase the success rate of M&A deals to realize competitiveness enhancement.

#### **Enhance risk management and establish a risk warning mechanism**

Manufacturing enterprises may face operations risks, market risks, financial risks or others. Such impacts endanger the vested interest and tangible assets of an enterprise, and jeopardize corporate reputation, which causes long-term damage to the enterprise. Therefore, enterprises should continuously strengthen their ability to manage risk, and establish "forecast" and "contingent" mechanism.

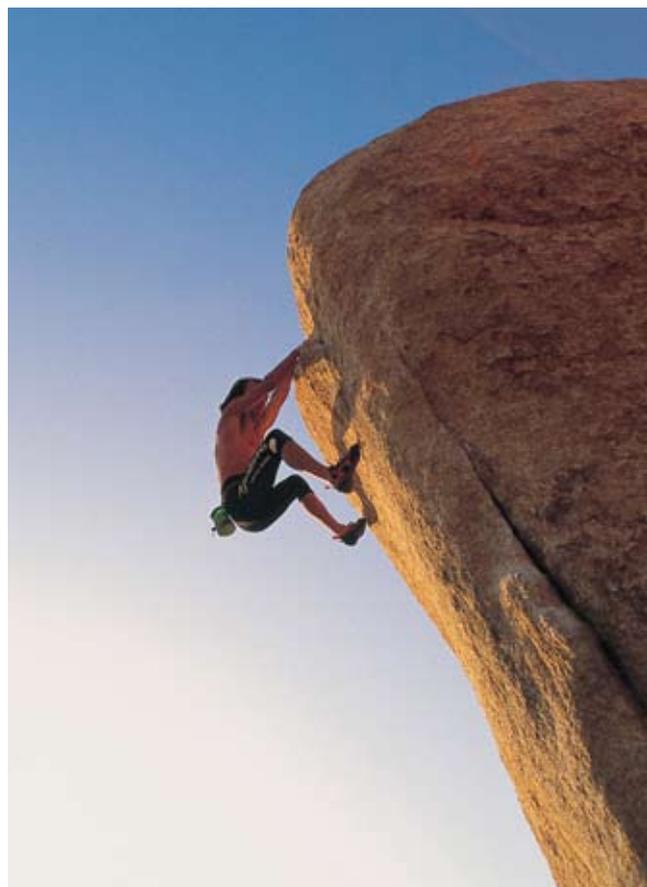
Baosteel Group, located in Shanghai, started to establish a comprehensive risk management mechanism a few years ago. Such a mechanism has been implemented in phases with continuous improvement. Today, Baosteel Group's understanding of risk management has penetrated aspects of its business including strategy, operations, and others aspects. Attributed to such mechanisms and soft capability, Baosteel Group maintained its position as the leading enterprise in the industry even after the financial crisis in 2008.

"Preparedness ensures success, while unpreparedness spells failure." We should eliminate the misconception that "manufacturing companies are different from financial institutions; therefore there is no need for risk management." Risk management and internal control mechanisms help management prepare for new challenges other than the traditional risks in quality and legal issues. Management of Chinese manufacturing enterprises should take such means such as continuous reforming and optimization of board governance, formation of corporate culture and training, and optimization of communications mechanism, with emphasis on both risk warning and planning in advance in order to resolve further risks, challenges and opportunities.

# Conclusion

Based on competitive analysis of the manufacturing industry in China and in other Asian countries, one can conclude that momentum inherent to competitive factors contributes to sustaining them, as strongly competitive sectors grow in each economy and less competitive ones shrink. Meanwhile, government policy and regulation may change that imbalance. The Chinese government issued the 12th FYP at the end of 2010, which aimed to consolidate and improve established sectors where inefficiencies still reside as well as promote the fast development of seven new strategic sectors including energy and technology areas. The strategic sectors, if developed successfully, will serve as platforms to supply the domestic market and global markets with 21st century goods that are of high value and address the world's critical energy, climate, food, and other resource challenges. These are sectors where China plans to systematically use its current strong competitive positioning to become a distinct innovator as well as dominant manufacturer.

Companies must look beyond the local environment, and must use a global approach. China is working hard to turn adverse factors, such as the volatile global economy and weak overseas market, into opportunities for structural adjustment of industries and transformation of economic growth. Also, while putting more effort into developing the domestic market, China's manufacturing enterprises have also started to do strategic layout in the overseas market. Some financially sound companies are acquiring technologies, brands, and sales channels globally. At the same time, they are also making use of capital leverage at higher efficiency, grasp the historical opportunities and are setting up leading enterprises in the global market. In regards to the financial environment, the RMB is playing an increasingly important role in the global market. With an increasing number of free trade agreements between countries around the world, Chinese companies are allowed to enter more markets, and their products are distributed through wider networks. All of the above are helpful to sustaining China's competitiveness and to further deepening its involvement in the global value chain at the next phase.



The future development of China's manufacturing industry has brought in new opportunities and challenges to the manufacturing enterprises. They should possess long-term vision, analyse the impacts to the industry and the enterprise itself from the future development, formulate corresponding strategies, and solve the issues in upgrades in internal management. From a long-term perspective, these will be the major sources in creating fortune for both enterprises and the state.

# Appendix: About the report

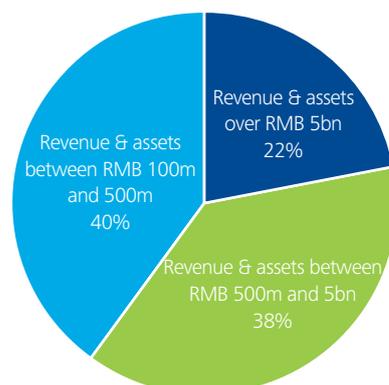
Deloitte China presents this report on the competitiveness of China's manufacturing industry in order to conduct an in-depth evaluation on the current status and future direction for the industry in China. Major data in this report are based on the results of the survey which was conducted by Deloitte China with 150 executives from Chinese large and medium-sized manufacturing enterprises between July and August 2011. In addition, about 10 executives from leading enterprises in major manufacturing sectors have been interviewed for in-depth discussion. This report also incorporated the insights from these executives.

## About the survey and the interview

Below is a summary of the profile (size, industry, ownership types of corporation) of the 150 enterprises and the personnel who have been surveyed. A professional third-party survey agency has provided assistance in collecting the answers to the questionnaire.

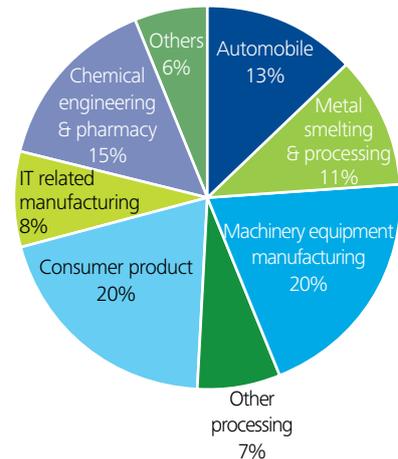
In terms of sizes, 22% of the companies are giant-sized enterprises with revenue and assets over RMB 5 billion; 38% of them are large-sized enterprises with revenue and assets between RMB 500 million and 5 billion (5 billion inclusive); and the remaining 40% of them are medium-sized enterprises with revenue and assets between RMB 100 million to 500 million (500 million inclusive) (Fig. 26).

**Fig. 26: Sizes of enterprises interviewed**



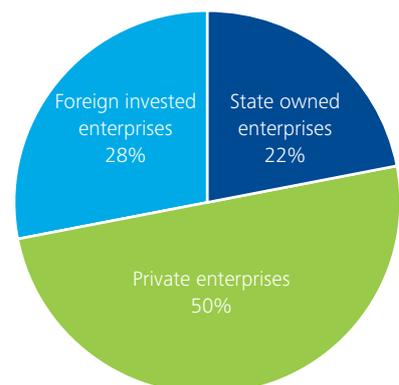
In terms of industry distribution, enterprises in machinery equipment manufacturing and consumer product manufacturing consist of 20% of the total respectively; 15% in chemical engineering and pharmacy; 13% in automobile; 11% in metal smelting and processing; and 8% in IT related manufacturing (Fig. 27).

**Fig. 27: Industry distribution of the enterprises interviewed**



In terms of ownership type of corporation, state-owned enterprises, foreign-invested enterprises and private enterprises accounted for 22%, 28% and 50% respectively (Fig. 28).

**Fig. 28: Types of corporation of the enterprises interviewed**



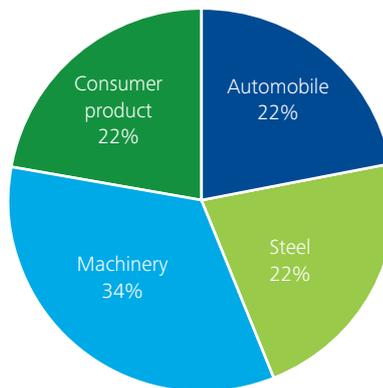
In terms of the functions of the interviewed executives, 23% of them were responsible for strategic planning; 19% for investment decision-making; and 23% for financial management (Fig. 29).

**Fig. 29: Functions of the interviewees**

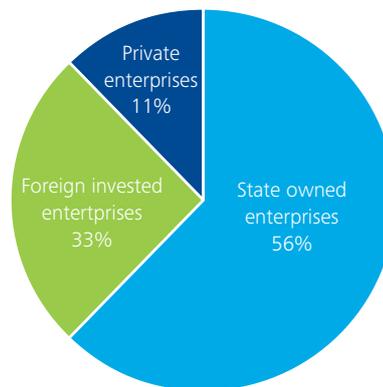


On top of questionnaires, Deloitte has also conducted in-depth interviews with around 10 executives from leading enterprises in major sectors, where the distributions of ownership types and industries of such enterprises are shown below.

**Fig. 30 Industry distribution of enterprises interviewed**



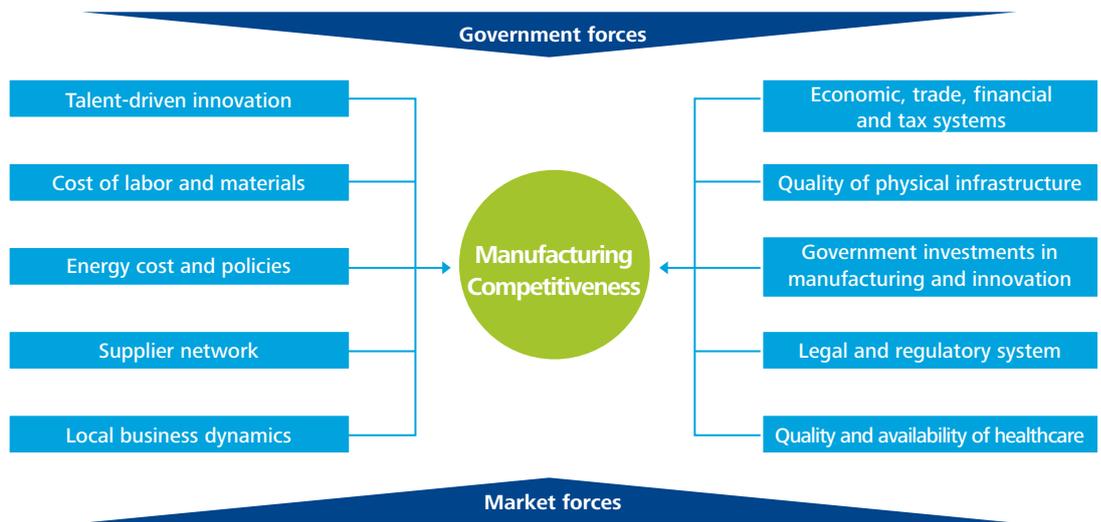
**Fig. 31 Ownership types of corporation of the interviewed enterprises**



### Analytical Methodology

Deloitte's model of global manufacturing industry competitiveness drivers (Fig. 32) is one of the major analysis models applied during the preparation of 2010 Global Manufacturing Competitive Index. The model allows comprehensive consideration of the major factors affecting manufacturing industry in various countries around the world. It is an ideal framework to illustrate the overall competitiveness of manufacturing industry in various countries. Therefore, such analysis model has been referred to and applied in this report.

**Fig. 32: Drivers of manufacturing competitiveness**



Source: Deloitte and US Council on Competitiveness - 2010 Global Manufacturing Competitiveness Index; ©Deloitte Touche Tohmatsu, 2010.

At the same time, considering that this survey is mainly an in-depth research on the competitiveness of China's manufacturing industry, with focus on China and the comparison between China and other Asian manufacturing countries, we made adjustments to the specific factors based on the real situation in China.

In this survey, ten factors were selected, including fixed costs, labor wages, supply of parts and other supporting resources, physical infrastructure, quality and availability of labor force, number of qualified senior technical talents, tertiary education level, complexity of taxation system and compliance costs, intellectual property protection, and government's support in science & technology and project investment.

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