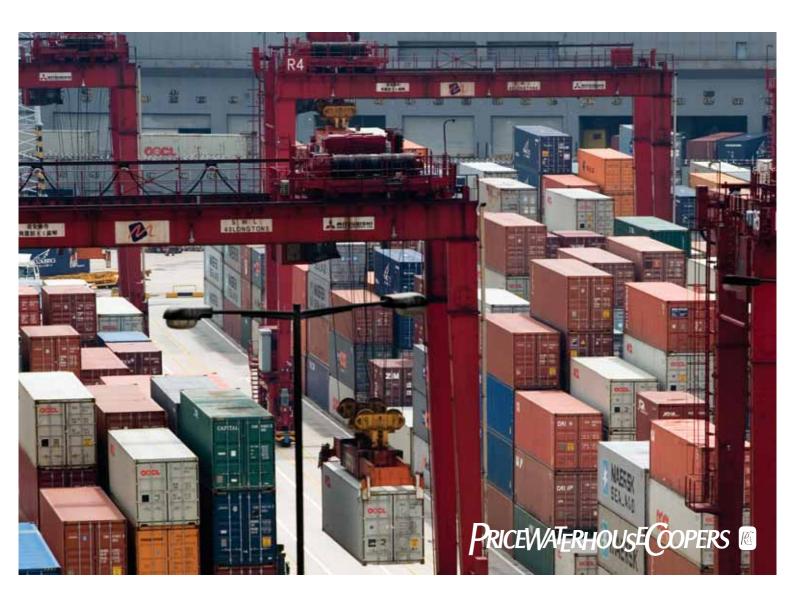
# Sourcing and logistics in China

Costs, processes and strategies of German companies procuring in the Chinese market



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English summary of the study conducted by PricewaterhouseCoopers Germany in cooperation with the German association for materials management, purchasing and logistics (BME)

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Editorial support Daniela Borkenhagen, Juliana Fernandes Elizabeth Montgomery (English summary)

Survey concept and evaluation Dr. Yvonne Fritzsche-Sterr, Hamburg

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#### **Foreword**

China is one of the world's export powerhouses. Trade with the US continues to grow at double-digit rates, topping \$300 billion in 2007. Regional trading partners like Hong Kong, Japan, South Korea and Singapore are also importing tens of billions of Chinese goods each year. But China's export strength doesn't end there – Germany, the Netherlands and the UK also made the list of China's top ten export destinations in 2007, with annual exports surging over 20% in Germany and over 30% in both the UK and the Netherlands. The top ten list was rounded out by the emerging markets of Russia and India, with even more dramatic increases of nearly 80% and nearly 65% respectively.

Most of these imports are motivated by anticipated cost benefits compared to procurement locally. But just how economical is the procurement of goods and products in China in real terms, once companies take into consideration related costs and increased risks?

To answer this question, PricewaterhouseCoopers Germany (PwC) carried out a study in collaboration with the Bundesverband Materialwirtschaft, Einkauf und Logistik e. V. (BME), the German association for materials management, purchasing and logistics, which was published in mid-March 2008. In this English summary, Harald Kayser, Peter Albrecht and Anselm Stolte, representing the many experts of PwC and BME who took part in the analysis of the survey, present the most significant results of the research.

In August and September 2007, a total of 203 German procurement managers/ directors and top logistics managers were surveyed concerning their experiences with sourcing and logistics in China. Sectors represented were industrial manufacturing, machinery and equipment (42%), automotive (14%), electronics and electrical (11%), chemicals and pharmaceuticals industry (10%), retail companies (9%) and service providers (7%). The results of the study are divided into five thematic areas. The structure used to present findings in this summary corresponds to that of the full study, which is available for download on the Internet at www.pwc.de/de/industrielle-produktion.

The results of the study deserve attention: the price benefit for those product groups that can be most economically sourced from China is approximately 50% compared to Germany, even after all logistics costs have been taken into consideration. On the other hand, companies suffer an average cost disadvantage of approximately 15% compared to Germany for product groups that are least economically sourced in China. In these cases, sourcing in China only continues to make sense for strategic reasons.

What is astonishing in both cases is that the majority of companies nonetheless continue to fail to make use of the many opportunities available to substantially reduce their logistics costs – for example, by making use of special customs procedures or more efficient organisation of their logistics structures.

Companies importing goods from China would be well-advised to critically examine their sourcing activities in the People's Republic.

We wish you a stimulating and rewarding read, and every success in your sourcing activities in China.

#### Harald Kayser

Automotive Leader and Leader China Business Group, PricewaterhouseCoopers AG Wirtschaftsprüfungsgesellschaft, Germany

#### Peter Albrecht

Eurofirms Industrial Products Leader and Board Member of PricewaterhouseCoopers AG, Wirtschaftsprüfungsgesellschaft, Germany

### Key findings and trends

Thanks to its massive workforce and low labour costs, China has become the 21st century's leading factory floor. The companies that we interviewed in this study, along with their peers in other industrialised countries, are looking to China for inexpensive sourcing of key goods and components, with around 10% of their international purchasing volumes sourced in China. Our research shows, however, that many companies are not sourcing as profitably in China as might be hoped. While on some products, the price advantage over sourcing locally is up to 50%, a third of the companies that buy from China actually suffer losses during the purchasing process.

There are clear differences in the effectiveness of Chinese sourcing for the companies that we interviewed. As might be expected, companies in industrial manufacturing, machinery, equipment, consumer goods, and electronics/electrical are profiting over-proportionally strongly from sourcing in China.

Nevertheless, size also matters: Companies that obtain goods from China most cost-effectively estimate that they achieve a price advantage for the most effective product groups of an average of 52 to 63%. This group includes a higher percentage of companies with annual revenues of less than €50 million. Companies that obtain goods from China the least cost-effectively, estimate the price advantage for the most expensive goods coming out of China at 5% cheaper than the German equivalent. When logistics costs are included, these companies are – on average – actually paying 10-16% more than sourcing in their home market. Companies with annual global revenues of over €1 billion are over-represented in this group.

### Why do companies who fail to obtain any cost advantages continue to source in China?

One reason may be inadequate cost controls: one fourth of the companies with more than €500 million annual revenues and 56% of the smaller companies are not using key performance indicators (KPIs) when controlling their procurement activities. This means almost a third of companies are sourcing in China without a sound data basis for making their purchasing decisions.

Another reason is the failure to take advantage of substantial cost saving opportunities offered by logistics parks, specific customs arrangements and local, tightly controlled service providers.

Often, however, as subsequent interviews with suppliers of large German automotive companies revealed, the reasons are strategic. By purchasing in China even at a loss in particular large companies with revenues over €1 billion open doors to improve their access to lucrative markets and investment possibilities in the region. These companies hope to achieve more favourable sourcing from China over time, with costs improving relative to local sourcing.

On the basis of our research, we have identified several key trends around sourcing in China:

- 1. Despite improved infrastructure and increasing competition, logistics costs are likely to continue increasing. Soaring fuel costs and steadily rising labour costs will also push up the overall cost of sourcing in China.
- Increased logistic cooperation amongst companies will provide some opportunities
  for savings, and specialised logistics operators may emerge. Increased use of costsaving customs procedures and logistics parks may also help companies to save
  costs.
- 3. Companies will focus on cooperation with strategically important suppliers in China. Chinese companies not currently doing business with such companies may find it difficult to acquire German customers in the future.

4. China will retain a key role in sourcing portfolios, but the significance of other emerging markets, especially Eastern Europe including Russia, as well as India and other Asian states like Vietnam, Thailand and South Korea will grow. Procurement from China, Eastern Europe and Russia and India should reach 40% of all imports by 2013, whereas sourcing from suppliers in established markets such as Germany is more likely to stagnate.

Whatever strategies companies use to manage their rising sourcing costs caused by increasingly expensive logistics and price pressure from rising labour costs, its clear that improving the efficiency and reducing the cost of global sourcing – whether from China or from other emerging markets like Vietnam or Central and Eastern Europe – will be a key challenge to achieving global competitiveness in the future.

For more insights on how companies that are sourcing in China can improve the profitability and efficiency of their international procurement activities please refer to the experts' commentaries at the end of this study, beginning on p. 32.

### Contents

-	oreword	ర
K	ey findings and trends	4
Α	Sourcing structures in China	9
1	Sourcing: Duration and locations	9
2	Organisation of sourcing: every second company relies on in-house procurement managers	11
3	Operative decision-making on logistics: jointly by Germany and China	13
4	Strategic decision-making: mainly cooperation between logistics and procurement	13
В	Sourcing logistics in China	15
1	Intra-Chinese transport in Chinese hands, quality control in German hands	15
2	Large companies' monitoring of logistics providers more stringent than that of small companies	15
3	Large companies prefer large logistics providers, small companies prefer small	16
4	International commercial terms: large companies seek to avoid risk, small companies shoulder it	17
С	Managing logistics costs when sourcing in China	19
1	Price advantages of purchasing in China: small enterprises procure more cost-effectively	19
2	Logistics costs: approximately 8–15% of total sourcing costs	20
3	Large cost differences for sourcing in China	22
4	Deficient cost controls at one in three companies	22
D	Customs management and individual tax aspects	25
1	Many large companies conduct their own customs clearance, but few smaller companies	25
2	Cost-reduction potential of cost-saving customs procedures scarcely used	25
3	Logistics costs most closely observed when setting transfer prices	27

Ε	Trends in sourcing and logistics in China	. 29
1	Further cost increases despite liberalisation and infrastructural improvement	. 29
2	Corporate cooperation in logistics and increased sourcing from affiliated companies	. 29
3	Sourcing in India and Eastern Europe to become more important over the medium term	. 30
4	Summary and outlook	. 31
F	Experts comments	. 32
S	trategies and approaches for successful sourcing in China	. 32
R	ealigning corporate strategy with global sourcing activities	33
In	nplications for industrial manufacturing companies	34
In	nplications for chemical and pharmaceutical companies	. 35
G	Methodology and description of sample	. 36
S	ervices and contacts	. 38
P	ricewaterhouseCoopers Europe and Germany	. 38
P	ricewaterhouseCoopers Global	. 38
В	undesverband Materialwirtschaft, Einkauf und Logistik e. V. (BME)	. 38



### A Sourcing structures in China

In recent years, the sourcing of products, raw materials and components in markets in various regions worldwide has increased considerably. The most successful companies source globally in order to achieve cost benefits and synergy effects. The resources required are obtained, irrespective of location, wherever they are available in sufficient quantity, at the required quality and at the optimum price.

Against this background, besides the established home markets, the Chinese market has become especially attractive. Companies looking to source goods in China need to consider the structures and conditions for sourcing in the region and be prepared to answer the following questions:

- Where in China should the company be sourcing?
- How will sourcing in China be organised?
- Who will make operational and strategic decisions?

This chapter shows China's importance as a sourcing market for German companies, and provides some direction for answering these three crucial questions.

### 1 Sourcing: Duration and locations

#### China as a sourcing market: high value for German companies

Over half of the companies surveyed have used China as a sourcing market for at least five years, and 20% have already been there for longer than 10 years (Figure 1). Clearly, many companies realised at an early stage how important it is to source products and raw materials in international markets, and in China in particular, in order to be able to gain cost benefits.

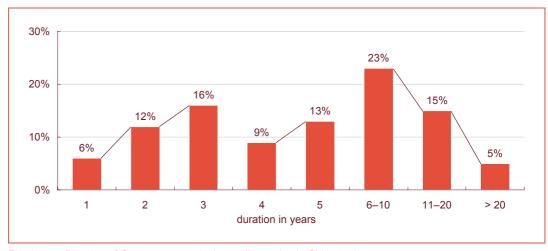


Fig. 1 Duration of German companies' overall sourcing in China to date

At the same time, the trend for new entries into the Chinese sourcing market is declining. On the one hand, many companies are already represented in China. On the other, though, competition from other developing national economies is also making itself felt, from India and Vietnam, but also from the nearer Eastern European sourcing markets.

#### Proportion of products sourced in China: smaller companies in the lead

The proportion of products currently sourced by German companies in China seen in terms of their worldwide sourcing activities averages approximately 10%.

Smaller companies, with fewer than 500 employees in Germany, put the proportion of their goods sourced in China at an average of 15% of their total sourcing volume. Companies with 500–2,000 employees put the figure at 9%, and for large companies with 2,000 employees or more, the proportion is just 7% (Figure 2).

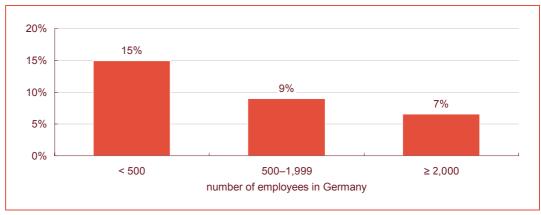


Fig. 2 Proportion of products sourced in China in the context of Global Sourcing

For smaller companies entering the Chinese sourcing market, then, China plays a much more important role in their overall procurement mix. This brings both benefits and disadvantages: on the one hand, they can achieve similar scaling effects in purchasing as large companies, but on the other hand they assume a higher market risk: changes to sourcing conditions in China, e.g. due to bursts of inflation or currency fluctuations, would have a considerably graver impact on the sourcing costs of these small companies. Large companies, conversely, are able to mitigate these risks by greater diversification of their global sourcing activities.

The comparison across industries also shows very remarkable results: German chemical and pharmaceutical companies procure almost 14% of their products and raw materials in China, whereas companies active in industrial products and electric/electronic devices allocate 9.6% and 9.2% respectively of their sourcing volume to China-based suppliers. Procurement managers of the automotive industry source only 6.4% of all supplies from China.

#### Choice of sourcing location: coastal regions preferred

Three out of four of the companies surveyed procure products, raw materials and components in the eastern coastal regions, such as Shanghai and Jiangsu, and half of companies do so in the southern coastal regions (e.g. Guangdong province, Hong Kong and Macau SARs). 20% of interviewed companies locate their sourcing in the central coastal regions (provinces of Zhejiang and Fujian). The inland, western provinces (e.g. Sichuan, Gansu, Shaanxi) are currently of less significance (Figure 3).

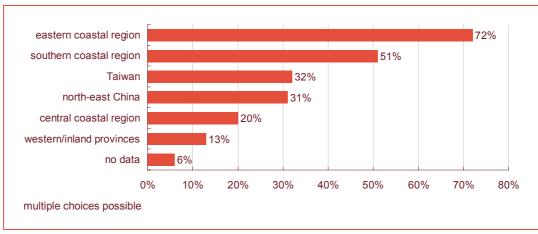


Fig. 3 Overall importance of sourcing regions in China

The companies of the various industries clearly differ in respect to their preferred sourcing locations within China. Six out of ten companies of the electronic/electrical industry procure in the southern coastal region, whereas only each third company of the automobile industry does so. Taiwan is most often chosen by the electronic/electrical industry and the automotive industry as a sourcing market. And significantly

more procurement managers of chemical and pharmaceutical companies than of any other industry locate their sourcing in China's central coastal region (Figure 4).

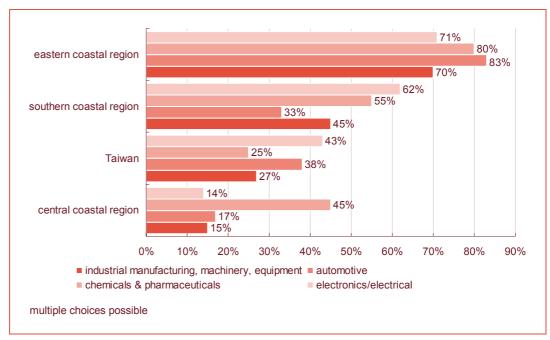


Fig. 4 Importance of sourcing locations within China: Regional focus for various industries

## 2 Organisation of sourcing: every second company relies on in-house procurement managers

Some 50% of surveyed companies rely on in-house procurement managers on the ground in China to organise their sourcing there. 38% work with purchasing staff employed at subsidiaries or joint ventures, and approximately a quarter of companies engage independent commercial agents (Figure 5).

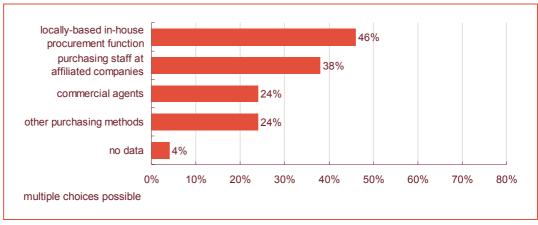


Fig. 5 Organisation of sourcing in China overall

Larger companies are far more likely to employ their own in-house procurement staff – nearly two-thirds of companies with annual revenues over €500 million do so – and also are more likely to use purchasing staff employed at subsidiaries, with nearly half of larger companies using this method. In contrast, only one-third of companies with less annual revenues use these two strategies.

The reason for this discrepancy is fairly simple – small companies are less likely than their larger peers to own subsidiaries in China. Further, smaller overall sourcing volumes make it less economically viable to employ an internal procurement capacity. Not surprisingly, then, nearly one-third of smaller companies engage independent commercial agents for their sourcing activities in China. This strategy allows smaller

entities access to China as a potential sourcing market, and also most probably enables them to maintain a higher level of flexibility (Figure 6).

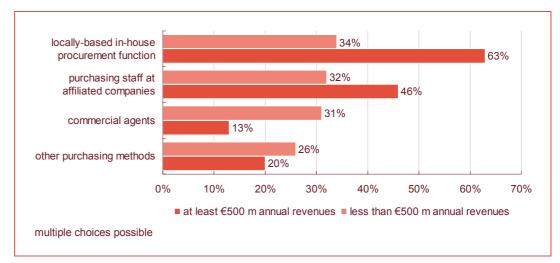


Fig. 6 Organisation of sourcing in China according to annual revenues

Surprisingly, companies who employ locally-based in-house procurement staff in China don't source, on average, more economically in China. In section C, beginning on p. 19, we describe the extent to which smaller companies are actually able to source more efficiently in China.

A look at the organisation of purchasing structures according to industry sectors reveals the following: permanent, locally-based staff are most often employed by the automotive industry (67%), as well as by electronics/electrical companies. In contrast, only around half of chemical and pharmaceutical companies and 40% of companies in industrial manufacturing, machinery and equipment use this type of purchasing structure (Figure 7). Chemical and pharmaceutical companies are by far the largest users of purchasing staff employed by subsidiaries or joint venture companies (55%).

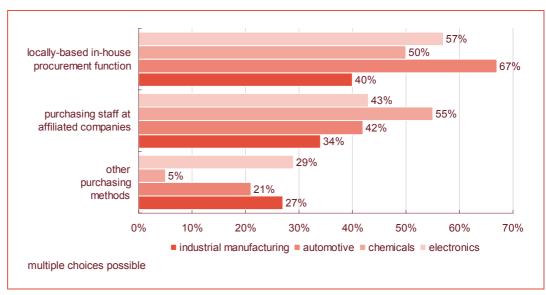


Fig. 7 Organisation of sourcing in China according to industry

## 3 Operative decision-making on logistics: jointly by Germany and China

The majority (54%) of respondents who are represented in China by purchasing staff in affiliated companies make operative decisions collaboratively with these partners. 39% drive the operative decision making process solely from Germany, and only a single company reported entrusting operative decisions solely to the local partner. These responses reflect the high level of complexity inherent in operative decision-making around logistics questions that often makes extensive consultation between the source and destination countries necessary.

Variations between industry sectors support this observation: Companies in industrial manufacturing, machinery and equipment as well as automotive decide an average of 63% of logistics questions jointly in China and Germany. The electronics/electrical industry falls a bit above average, with nearly seven out of every ten companies deciding logistics matters together with Chinese partners. The chemicals and pharmaceuticals industry provides a contrast to this trend – over half of these companies make decisions solely in Germany. Companies with subsidiaries and other affiliated companies in China who make logistics decisions solely in Germany may be failing to take advantage of an important opportunity to reduce their overall tax burden. When operative logistics decisions are made in Germany, related risks need to be calculated into transfer prices, sometimes making a substantial impact. We discuss this issue in greater detail in the full version of this study.

## 4 Strategic decision-making: mainly cooperation between logistics and procurement

Day-to-day operations are not the only matters which require decision-making. Companies also need to make strategic decisions around their sourcing strategies over the longer term. These types of strategic decisions usually involve the companies' logistics department (83%). However in roughly 17% of these companies with purchasing staff employed by subsidiaries or joint venture partners, they are not part of the inner circle (Figure 8).

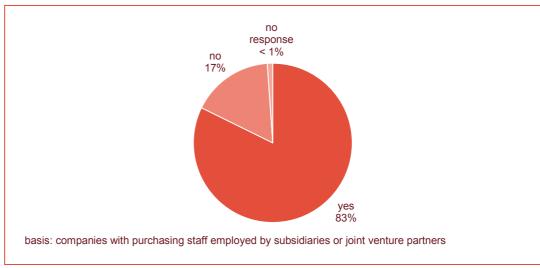
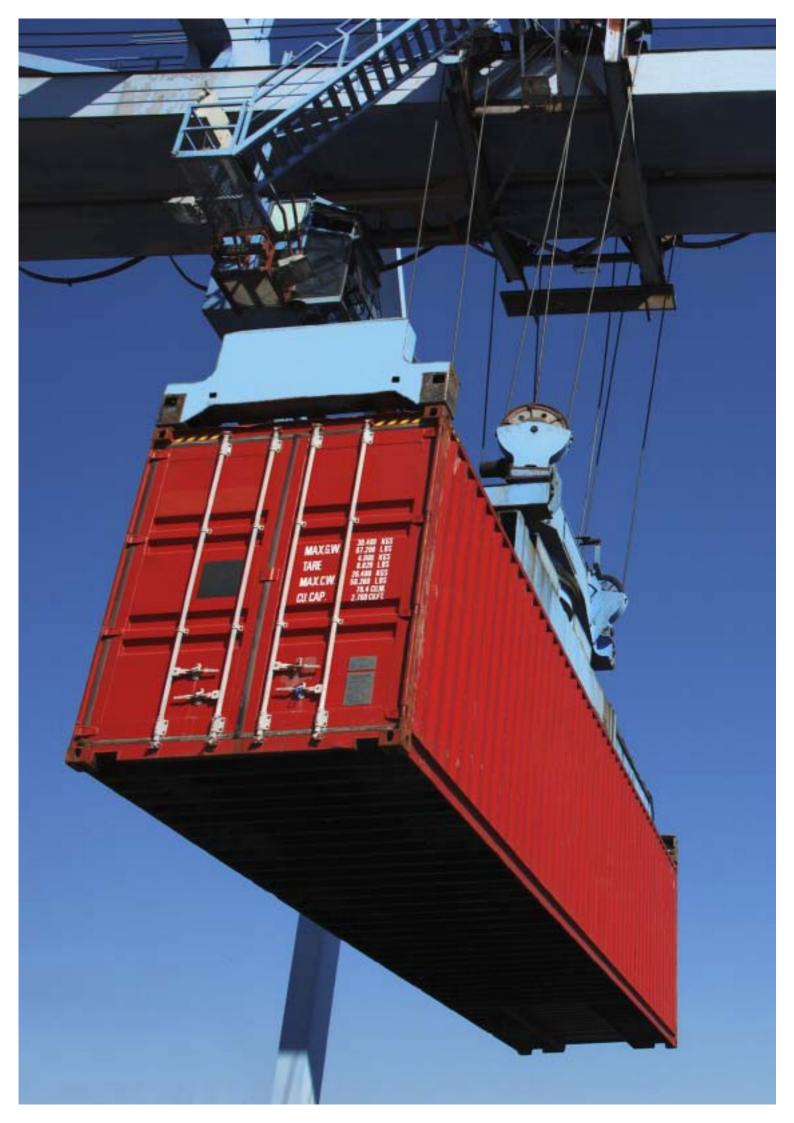


Fig. 8 Integration of the logistics department into strategic decision-making overall

This means in almost every fifth of these companies the procurement managers do not confirm the costs of logistics with their colleagues of the logistics department before awarding a sourcing contract to a Chinese company. In a worst case scenario, this failure to calculate additional freight and logistics costs can entirely negate the price advantage sought by sourcing in China.



### B Sourcing logistics in China

German companies sourcing in China follow different rules of thumb for logistics than they do in their home markets. The choice of whether to use a German or Chinese service provider varied depending on the type of service. Service contracts in the field of intra-Chinese transportation are most often awarded to Chinese contractors. The reasons for this are primarily that Chinese freight companies have easier access to means of transport and local knowledge. Further, the Chinese logistics market has only recently opened to foreign companies, which therefore have less experience in the market. From an industry perspective, the chemicals and pharmaceuticals industry stands out as the leading outsourcer to Chinese service providers, with 80% of its services outsourced in this way.

## 1 Intra-Chinese transport in Chinese hands, quality control in German hands

German companies very clearly prefer German logistics providers for quality control. Companies from the automotive industry in particular rely heavily on German labour. Customs handling is also carried out primarily by German contractors. However, Chinese and German providers are relied upon to an approximately equal extent for warehousing and security services, while the fields of packaging and intra-Chinese transportation are (still) dominated by Chinese contractors (Figure 9).

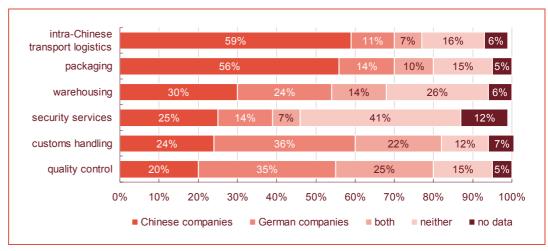


Fig. 9 Total contractors for individual logistics areas (by service)

## 2 Large companies' monitoring of logistics providers more stringent than that of small companies

Of the companies we interviewed 36% monitor their Chinese logistics providers more stringently; only 28% exert the same degree of control over their German and other non-Chinese contractors. And while 43% of small and medium-sized companies in Germany indicate that they exert rather a weak influence over their Chinese contractors, large companies tend to control their Chinese logistics provider rather strictly: only 18% tend to give their Chinese contractors a free hand (Figure 10).



Fig. 10 Monitoring of Chinese contractors according to number of employees in Germany

Companies which subject their Chinese contractors to stricter controls are also much likelier to view logistics as strategically vital. Correspondingly, they are also more likely to include their logistics department in consideration of strategic sourcing issues (Figure 11).

involvement of logistics department in strategic sourcing decisions	overall		rman and otl		Chinese contractors		
		looser control	medium control	stricter control	looser control	medium control	stricter control
yes	83%	85%	83%	83%	73%	83%	89%
no	17%	14%	17%	18%	25%	17%	11%
no data	1%	2%	_	_	3%	_	_

Fig. 11 Involvement of logistics department in strategic sourcing decisions and monitoring of logistics service providers

## 3 Large companies prefer large logistics providers, small companies prefer small

More than half of large companies prefer to contract major logistics companies. Only one in five of these companies mostly work with small and medium-sized enterprises with less than €500 million annual turnover. Conversely, smaller companies almost twice as often award their contracts to smaller service providers (Figure 12).

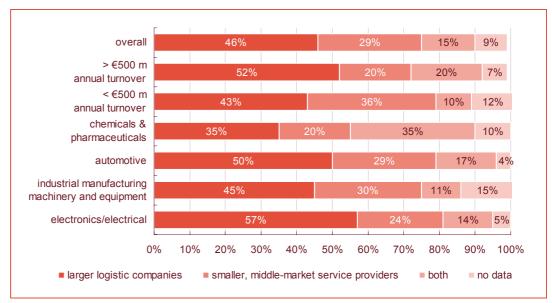


Fig. 12 Preference for larger logistics companies vs. middle-market service providers

## 4 International commercial terms: large companies seek to avoid risk, small companies shoulder it

International commercial terms (Incoterms) D clauses (arrival clauses) imposing transport costs and risks on the vendor are used almost twice as frequently by larger, high-turnover companies (36%) than by lower-turnover companies (19%). Conversely, F clauses, in which main transport costs and risks are borne by the buyer, are preferred by 48% of smaller companies. Among higher-turnover companies the figure is still 41% (Figure 13).

#### Incoterms

Incoterms, or international commercial terms, are a series of international sales terms widely used throughout the world, devised and published by the International Chamber of Commerce (ICC). They are used to divide transaction costs and responsibilities between buyer and seller. Incoterms ensure consistency around questions related to the delivery of products from the seller to the buyer, in particular around how goods are transported and which party is responsible for costs incurred. They also specify which party bears various types of risk at specific points in the transport process.

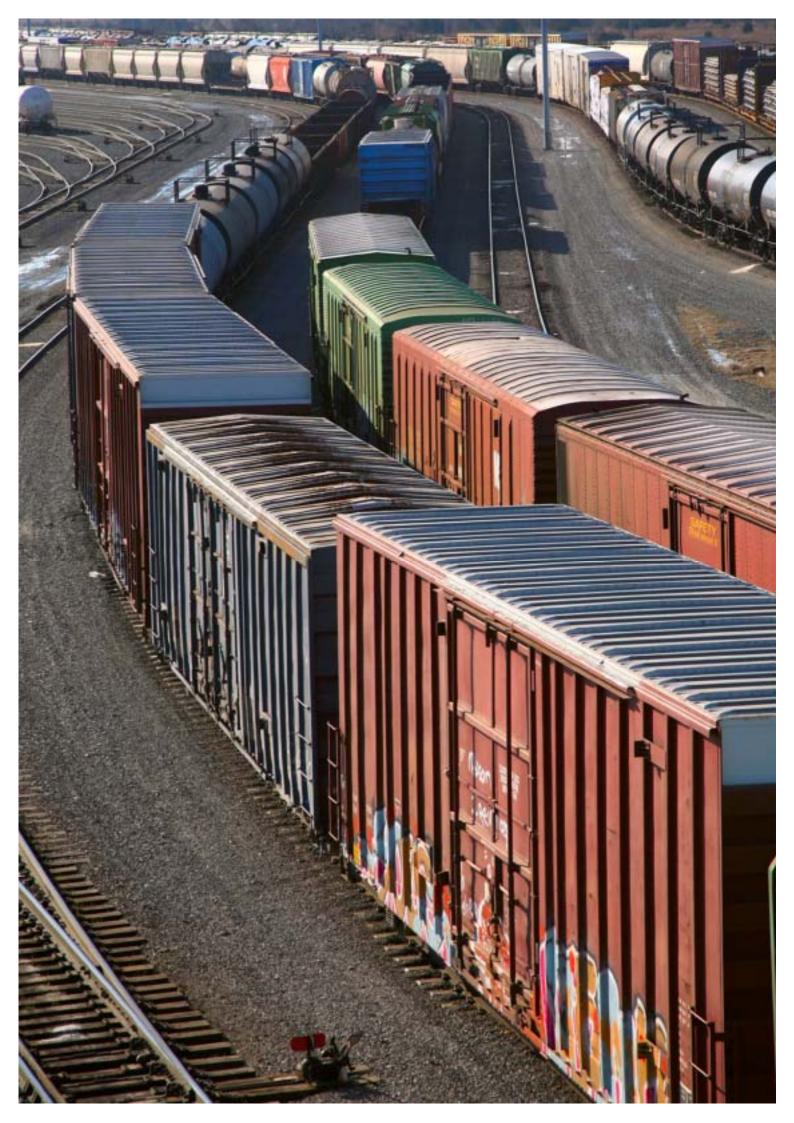
Incoterms are divided into four groups. The groups are ordered below to show increasing responsibility on the part of the seller for the safe delivery of goods.

- E clauses: Departure, all transportation costs and risk are borne by the buyer
- F clauses: Main carriage unpaid, primary transportation costs and risk are borne by the buyer
- C clauses: Main carriage paid, primary transportation costs and a portion of risk are borne by the seller, the remaining risk is assumed by the buyer
- D clauses: Arrival, all transportation costs and risk are borne by the seller



Fig. 13 Preferred Incoterms clauses for Chinese trade logistics by annual turnover

If the buyer bears the main transport costs and risks through an F clause, they will be able to negotiate better prices with the supplier compared to sourcing via a D clause. If he also finds a low-priced logistics contractor for delivery and has delivery risk under control, he is at an advantage compared to a buyer using D clauses. This is very likely one important reason why Chinese logistics providers are more strictly monitored by their German customers. On the other hand, the use of D clauses, and, to a lesser degree, also C clauses, is a sign of negotiating power. Large companies have the standing in global sourcing markets to impose all-inclusive contracts on their suppliers in which the costs and risks of delivery are borne by the supplier. However, it is striking that only approximately 5% of German companies sourcing in China work with E clauses, which stipulate that all transport costs and risks are entirely borne by the buyer. This means that in most cases the vendor is also profiting from the provision of logistics within China. Companies in Germany and other foreign markets could presumably save money if they were to award pre-carriage in China to capable logistics providers, whom they then monitor themselves.



### C Managing logistics costs when sourcing in China

Cost management refers to a management process designed to analyse and manage the total cost of a product, service, or project. Companies need to identify all of the factors which contribute significantly to overall cost to ensure effective cost management The following elements are critical to understanding the full cost of procurement:

- Cost of raw materials and components
- · Logistics costs
- Freight costs in the procurement and destination markets
- · Warehousing costs
- · Costs to ensure delivered goods meet quality standards
- Management costs
- Costs due to damages incurred in the transport process
- Customs (given that this study investigates deliveries to Germany from China)

How economical is the sourcing of goods and products in China in real terms, if all these costs as well as the higher risk are taken into consideration? Participants' responses show a differentiated picture of costs and the advantages of sourcing in China.

## 1 Price advantages of purchasing in China: small enterprises procure more cost-effectively

In order to calculate the average cost savings achieved by sourcing in China, respondents were asked to consider the entire spectrum of product categories sourced in China. Respondents were then asked to evaluate first the product category which represented the most significant cost savings, and then the product category which represented the least significant cost savings in comparison to local procurement in Germany, and were asked, "what percentage of cost savings (Free on Board, FOB) did you achieve for each of these categories in comparison to Germany?"

#### Free on Board

In international commercial terms, FOB designates deliveries where the seller delivers goods to the point of shipment; no costs are incurred by the buyer up to this point. The buyer takes over costs and risks for the process when taking possession of the goods. This type of contract is one of the most common and was chosen as a standard in order to achieve comparability of price savings.

Survey respondents reported an average savings of 30 to 35% (FOB) for products in the most economical category. The product category with the least dramatic cost savings achieved an average cost savings of only 11 to 13% (Figure 14).

#### Average price savings of 20%

Overall, the average FOB price benefit achieved through sourcing on the Chinese market across all companies and product groups compared to sourcing in Germany lies between approx. 19 and 25%.

According to the questionnaire, SMEs import from an average threshold of 15% price savings (FOB), large companies from 9%. For SMEs, then, price savings are the prime motivation for sourcing in China. For large companies, China is to a greater degree also important as a production location and sales market. They are therefore more likely to be prepared to accept lower margins for sourcing in China in order to attain overriding strategic goals.

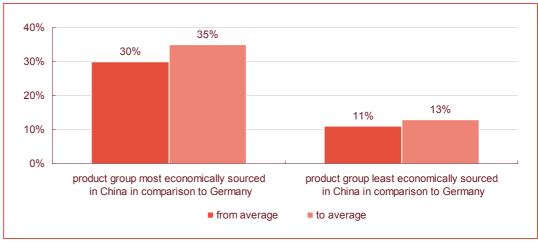


Fig. 14 Average price savings (FOB) when sourcing in China in comparison to Germany

## 2 Logistics costs: approximately 8–15% of total sourcing costs

Before goods arrive in German warehouses, they need to be transported halfway across the world from China to Germany. In order to understand the complete cost of procurement, companies need to calculate and include the costs of related logistics. Pure shipping costs are the largest single line item and were estimated to make up between 8 and 10% of the total cost of procurement in China (Figure 15). Logistics costs' estimated share of total sourcing costs averages between 12 and 15%. Additional costs of logistics, for example insurance, appraisal costs, warehousing, damages and management costs thus comprise approximately a third of total logistics costs.

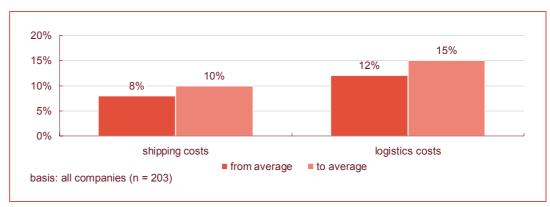


Fig. 15 Pure shipping costs and total logistics costs as a percentage of overall procurement costs

#### Logistics costs

We use this term to denote all costs associated with the placing of goods at the disposal of the company in the destination market. This includes shipping/freight, insurance, appraisal costs, customs, delivery, warehousing, damages, and management costs.

We observed some variation between industries around logistics costs. The automotive industry reported an above-average level of logistics costs as a percentage of total procurement costs, with levels of 15 to 20%. In contrast, chemical and pharmaceutical companies reported a lower level of logistics costs, with the share of total procurement costs for the sector falling between 8 and 12%. Companies in industrial manufacturing, machinery and equipment generally reported costs of between 12 and 14%.

These results suggest that costs for appraisal and quality control are an important lever for cost savings: along with delivery and freight costs, they are the largest cost

block when sourcing from China. Almost 40% of surveyed companies consider them to be high. Many companies are still concerned about the possibility of inadequate quality and do not have complete trust in their Chinese suppliers. Both are core factors where much potential remains for reducing costs, and thus for making sourcing from China more profitable.

Companies which succeed in improving the quality of products, manufacturing and delivery from their Chinese suppliers by means of efficient supplier management not only reduce their appraisal costs, but also establish enduring supply relationships based on trust (Figure 16).

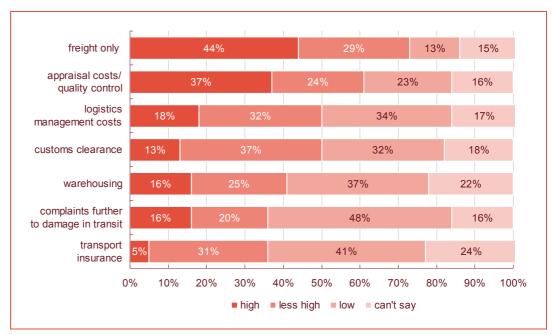


Fig. 16 Level of logistics costs when sourcing in China

In large companies in particular, high logistics costs often sap the cost advantage of sourcing in China. For the product groups of these companies, which in comparison to Germany are the least advantageous to source in China, the result is far worse still. Here, logistics costs even drive the costs of sourcing in China above the cost price of sourcing the product in Germany (Figure 17).

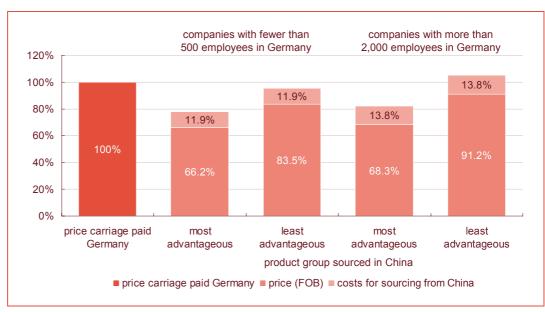


Fig. 17 Prices when sourced in China and Germany

### 3 Large cost differences for sourcing in China

Questions of sourcing costs in China should be differentiated according to product group and sourcing type. The study investigated how companies sourcing in China make distinctions (irrespective of their size) in view of the benefits of their sourcing strategies and practice. To ascertain this, three groups of roughly equivalent size were defined for each:

- 1. "Bargain hunters", who source comparatively very cheaply in China
- 2. "Sourcing experts", who purchase economically in China
- 3. "Strategists", for whom sourcing in China no longer makes sense from a costs perspective but for strategic reasons

Figure 18 gives an overview of the results.

Thus, companies in the "bargain hunters" category who source the most cheaply in China, estimate the price advantage they gain from sourcing in China at an average of at least 31–40% compared to sourcing in Germany for their most advantageous product group. After logistics costs, the costs of sourcing in China for companies of this group average just 52–63% of costs for sourcing in Germany.

On the other hand, companies in the "strategists" group who source the least advantageously in China, estimate the price advantage gained over Germany for their least advantageous product group at an average maximum of 5%. Including logistics costs, these companies accept a cost disadvantage of 10–16% for sourcing in China compared with sourcing in Germany (Figure 18).

The results of the study allow the following conclusions to be drawn:

- The industrial manufacturing, consumer goods and electronics/electrical industries profit disproportionately from sourcing in China.
- Highly profitable sourcing relies on local suppliers and purchasers with concomitant strict monitoring of logistics providers.
- Companies with highly profitable sourcing in China make greater use of data from key performance indicators for cost management.

### 4 Deficient cost controls at one in three companies

Only 63% of all interviewed companies state that they use data from key performance indicators in logistics management. At least one in three German companies sourcing in China, then, makes its sourcing decisions in the absence of concrete data. In contrast, companies investing in cost management are in a position to evaluate decisions in favour of or against sourcing in China more accurately, thanks to the cost transparency they achieve. They are better able to assess their role in the supply chain and the associated cost, risk and value drivers of their business model, and they thereby fulfil a crucial condition for long-term, successful action in the market.

	most adva	intageous prod	duct group	least adva	antageous prod	duct group	
	bargain hunters (1)	sourcing experts (2)	strategists (3)	bargain hunters (4)	sourcing experts (5)	strategists (6)	
costs of sourcing in China	compared to C	Sermany carria	age paid (uppe	r and lower av	erage values i	n each case	
price (FOB)	47–55%	68–72%	82–86%	70–73%	88–90%	97–98%	
total logistics costs related to price (FOB)	6–9%	9–11%	13–17%	9–11%	12–16%	13–18%	
costs of sourcing	52–63%	77–84%	95–103%	79–83%	101–106%	110–116%	
annual turnover (in €)							
less than 50 m	++			++			
50 m–1 bn		+					
over 1 bn			++			++	
number of employees							
fewer than 500				++			
500–2,000		+			+	+	
2,000 and over			+			+	
industry							
consumer goods industry	+						
electronics/electrical	+				+		
industrial manufacturing, machinery and equipment			+	+		_	
chemicals and pharmaceuticals		+	0			+	
sourcing practice							
purchasing staff locally				+			
local permanent buyers in affiliated companies	+	+				+	
preferred Incoterms	F–		F+/D+	F+/D-		D+	
contracting practice	-						
degree to which logistics suppliers are monitored	+			+		0/+	
packaging awarded to Chinese logistics suppliers	+			+		-	
intra-Chinese transport logistics awarded to Chinese logistics suppliers	+						
sourcing regions							
southern and eastern coastal provinces/ municipalities/SARs (Hong Kong, Guang- dong, Shanghai)	+	+					
sourcing experience in China (average no. of	7	7	9	10	9	7	
years)							
cost and supplier manager	nent						
use of key data in logistics controlling		++		++			
increasing future share of sourcing with associated companies			+			+	
	nent						
customs and tax managen incorporation of logistics costs in transfer prices (purchasing staff at associated company locally)	+	+		+		+	
customs procedures and lo	ustoms procedures and logistics parks: no observable trend, as case numbers are too small						
Trend of the entire survey in the		ned (groups 1-6)				pronounced or	

Fig. 18 Characteristics by product group and sourcing type



### D Customs management and individual tax aspects

The purpose of active customs and tax management is to keep customs costs and the tax burden as low as possible when sourcing from China. Customs management plans the procedure for crossing the borders of customs regions, making use of savings potentials available in doing so. One starting point for this is customs clearance and the use of cost-saving customs procedures. From a tax perspective, the setting of transfer prices and the use of Chinese logistics parks are of particular interest.

# 1 Many large companies conduct their own customs clearance, but few smaller companies

The majority of those surveyed (57%) carry out customs clearance via forwarding agents in Germany. 47% carry out their own customs clearance, in particular larger, higher-turnover companies. 62% of larger companies do this, and only 45% use forwarding agents. Conversely, lower-turnover companies have greater recourse to forwarding agents (66%) and only 39% carry out their own customs clearance.

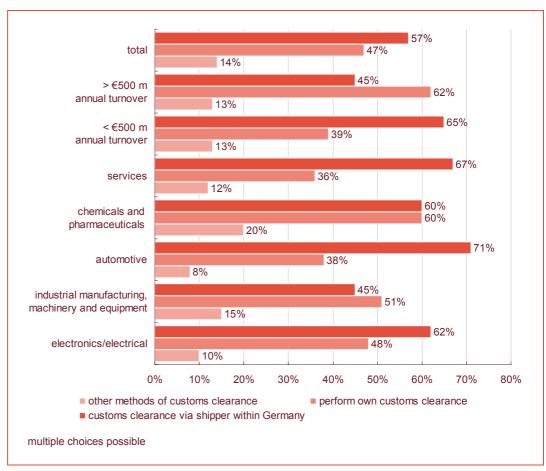


Fig. 19 Customs clearance upon arrival of goods in Germany

# 2 Cost-reduction potential of cost-saving customs procedures scarcely used

Chinese customs legislation is also conversant with cost-saving customs procedures, such as inward and outward processing. However, the new edition of the Prohibited Catalogue under Processing Trade, which came into force on 26 April 2007, has drastically reduced the range of goods to which inward processing may be applied.

Within the permissible classes of goods, however, primary materials may still be imported for inward processing from outside the Chinese customs area, as before, without incurring import duties, if it is demonstrated that the same goods will be exported again.

Only 22% of those surveyed have as yet applied for cost-saving customs procedures (customs warehouse procedure, inward and outward processing, processing under customs surveillance and temporary admission). Almost half of those surveyed do not use these customs procedures. One in three was unable to provide data on their use of these customs procedures (Figure 20).

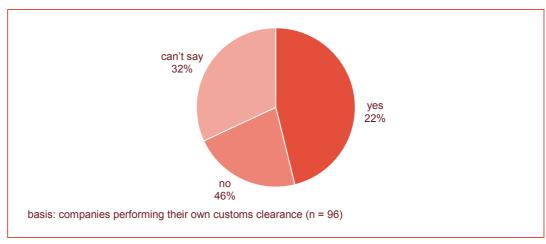


Fig. 20 Level of usage of cost-saving customs procedures

Likewise, few companies indicated that they have as yet made use of the benefits of logistics parks. Logistics parks enable, among other advantages, transit trade without goods entering Chinese customs and tax territory. No transit duties are payable.

#### What services do China's logistic parks offer?

- Delivery of goods
- · Receipt of goods, appraisal, claim reporting, warehousing
- Consignment sales, picking, packing, shipping
- · Labelling, co-packing, packaging, inventory management
- Transport logistics for Business to Business, as well as Business to Consumer
- · Over-Night-Delivery, Cash on Delivery
- Recycling, core recovery, processing of returns
- Repair and maintenance services on products originally produced in China
- Research and development as well as material assessment

Of the companies interviewed, less than 9% work with logistics parks in China. Only a few of the companies which do work with logistics parks do so in order to call upon services such as the assembly and packaging of goods sourced in China. Even fewer companies implemented the concept in order to process goods sourced in China, for the purpose of transit trade or because they wished to raise a claim for reimbursement of VAT.

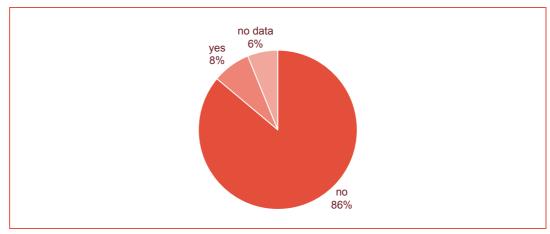


Fig. 21 Use of logistic parks in China

## 3 Logistics costs most closely observed when setting transfer prices

Conversely, almost 80% of companies stated that logistics costs were considered in setting transfer prices in their industry (Figure 22).

Transfer pricing refers to the pricing of contributions such as services and assets, which are transferred within legally autonomous units of a multi-national corporation. Transfer pricing often has considerable implications for the tax basis of a multinational corporation, to the extent that the provision of services and assets exceed upper taxable limits.

However, smaller companies in particular still do not take their logistics costs into account in a comprehensive manner (Figure 22).

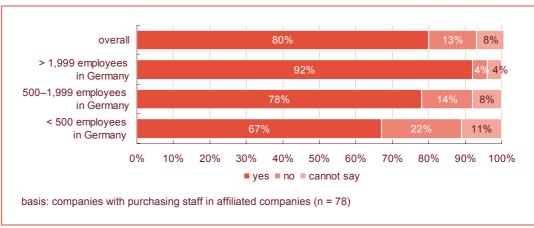


Fig. 22 Including logistics costs in the calculation of transfer prices is considered standard across industries



### E Trends in sourcing and logistics in China

Our survey asked participants to give their opinion on trends that a large number of sourcing and logistics executives had mentioned during the many preliminary interviews held prior to the survey. BME and PwC were particularly interested in two questions:

- How do German companies view the future of sourcing and logistics in China (i.e. market trends)?
- What strategies and methods do they believe to be suitable ways of reacting to these changed market conditions (i.e. management trends)?

Figure 23 provides an overview of the most important findings.

If the expectations of the vast majority of the (chief) buyers and logistics executives are realised, there will be four major trends affecting sourcing in China over the next three to five years:

## 1 Further cost increases despite liberalisation and infrastructural improvement

Most of those surveyed believe that the cost-reducing effects on logistics services of increased competition and improved infrastructure will be outweighed by cost-increasing factors such as higher fuel and wage costs. Demand for logistics services will also cause price inflation, as it will continue to exceed supply.

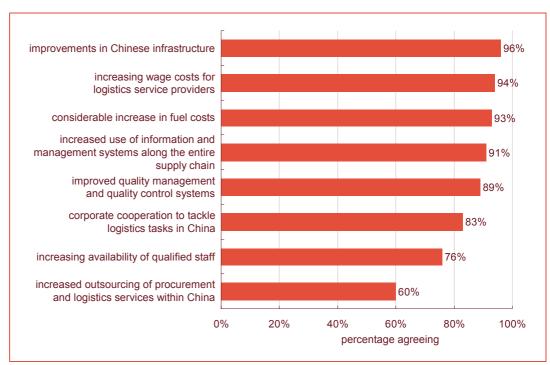


Fig. 23 Trends in business activities in China

# 2 Corporate cooperation in logistics and increased sourcing from affiliated companies

Increasing logistics costs will be one of the main driving forces behind more intensive cooperation among legally independent companies, especially when it comes to logistics per se. A large majority of those surveyed believe that in the medium term, cooperation between unrelated companies concerning logistics in China will increase. In the largest companies, 77% of those surveyed expect increasing cooperation, but

these figures are even higher for smaller companies (83%) and medium-sized ones (87%). These results are presented in Figure 24.

Options include combining logistics infrastructures such as transport and warehousing space, setting up shared teams for quality assurance and customs handling, or even creating jointly-owned logistics service providers that could also offer their services to other companies.

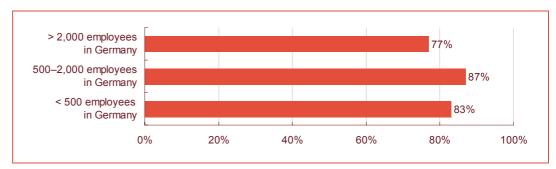


Fig. 24 Cooperative projects in logistics in China (by number of employees)

Along with cooperation in the area of logistics, increased sourcing from affiliated companies would provide a second option to allow companies to reduce the costs of sourcing in China through improved control and cooperation, as well as transfer pricing. Survey respondents expect that companies already managing their sourcing in China by using sourcing staff belonging to affiliated companies will increase their shareholdings in strategically important Chinese suppliers and will continue to increase the proportion of their sourcing from such companies (Figure 25).

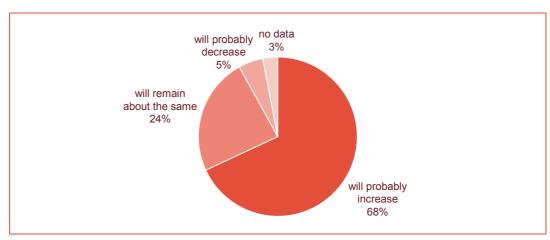


Fig. 25 Estimated changes in procurement from affiliated companies in China over the next three to five years

Chinese suppliers that do not belong to this inner circle will in future find it more difficult to sell their products to German companies.

## 3 Sourcing in India and Eastern Europe to become more important over the medium term

Of the companies already active in China, 75% stated that sourcing in China would continue to become more important. But they also expect to increase their sourcing from Eastern Europe (67%) and India (65%). Thus, even those companies already active in sourcing in China believe that in the medium term, Eastern Europe and India will become considerably more important (Figure 26).

In contrast, sourcing from Germany and other developed industrialised countries will, according to those surveyed, remain at approximately the same level. In relative terms, the proportion of goods and products sourced in Germany will decrease, while

German companies expect to purchase well over ten percent of their goods and products in China over the next three to five years.

### 4 Summary and outlook

For most of the companies surveyed, sourcing in China is profitable despite high – and increasing – logistics costs. Those product groups that can be most cheaply acquired in China have a price advantage over Germany of 50%, even after all logistics costs have been taken into account.

On the other hand, one-third of those companies that procure goods in China accept that doing so is currently unprofitable. Companies belonging to this group, the "strategists", accept that the product groups that are most expensive for them to acquire in China may cost them on average about 15% more than sourcing the same product group in Germany.

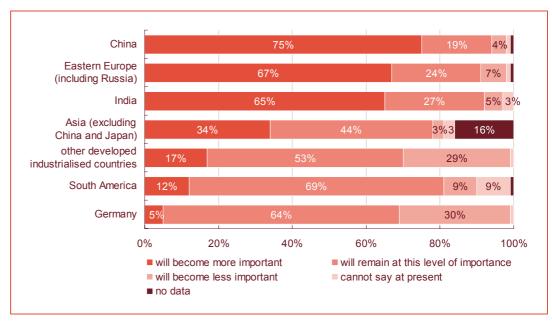


Fig. 26 Important sourcing regions in the future

Those surveyed expect that in five years, sourcing from China, Eastern Europe (including Russia) and India will comprise 40% of their total imports. This will increase German companies' dependence on the Chinese market and other growing sourcing markets (Figure 26).

For this reason, it is surprising that many of the companies surveyed do not make any use of the many opportunities for considerably reducing their logistics costs, for example by using specialised customs procedures or by organising their logistics structures more efficiently. In particular, companies that are already sourcing in China will not only be affected by the increasing costs of logistics services, which will rise considerably in the medium term; given the high rate of inflation in China and increasing wages for labour-intensive products, such companies should also prepare themselves for higher prices for their Chinese sourcing. Pressure on purchasing margins will therefore increase from a number of sides. Companies whose sourcing costs are already high will find it even harder to purchase profitably in China in the future.

Thus, companies that are engaged in global sourcing would be well advised to critically review their sourcing activities in China and other sourcing markets. In addition to the approaches outlined by the study participants and expert advisors, such companies should give serious consideration to how they can leverage additional cost-reduction potential in sourcing. This includes, for example, involving buyers and logistics experts more closely at a product-development stage; investment planning; and sourcing controlling.

### F Experts comments

## Strategies and approaches for successful sourcing in China

Mr Kayser, what strategies and approaches does this study suggest that companies already involved in sourcing in China or who are planning to become active there should pursue?

To ensure that sourcing in China will remain competitive even with long-term increases in logistics costs – or for those goods where the price advantage is minimal, to even make it competitive – successful companies will need to take the following approaches:



- They should implement a powerful cost-management system. By that I mean a system based on key performance indicators that takes into account all the costs of sourcing and the company's strategic goals.
- They should continually monitor which products are available under which conditions (in terms of quality, price, quantity and supply times) in the different sourcing markets – not just China.

Procurement strategy and management

- They should involve buyers and logistics experts more closely at the productdevelopment stage. This will help avoid nasty surprises down the line that can only be dealt with through costly redesigns.
- They should strengthen their purchasing and logistics divisions in each sourcing market. Being closer to the market makes it easier to keep up with new developments and to build up relationships with their suppliers.
- They should aim to develop long-term supplier relationships and should include strategically important suppliers in a comprehensive supplier management system. Systems like these can continually analyse and develop supplier relationships or, where necessary, indicate that a supplier should be replaced.

Tax and customs planning

They should engage in active customs and tax management processes, especially
by making use of instruments such as logistics parks and cost-saving customs
procedures, but also by making maximum use of transfer pricing.

#### Logistics management

- They should consider reducing their purchase costs by taking on transport risks themselves. They should examine whether in logistics they could take on increased risk while also having tighter control over service providers, for example by making use of Group F or Group E Incoterms clauses or by commissioning logistics operations within China themselves.
- They should consider where cooperative logistics projects could be useful in which sourcing markets and with which companies.
- Larger companies, in particular, should consider integrating logistics service
  providers and suppliers through alliances and shareholdings; this could reduce the
  costs and risks associated with sourcing and increase value-added.

#### Diversification

• Finally, they should not focus too heavily on sourcing in China alone, but should actively make use of opportunities for diversification into other growing markets.



Harald Kayser Automotive Leader and Leader China Business Group, Germany Tel.: +49 511 5357-5685 harald.kayser@de.pwc.com



Anselm Stolte
Operations Manager
China Business Group,
Germany
Tel.: +49 711 25034-3888
anselm.stolte@de.pwc.com

## Realigning corporate strategy with global sourcing activities

Mr Stolte, how can companies make sure that their global sourcing activities are in line with their strategic goals?

As this study suggests, increasing the production capacity in China and other growth markets might – rather surprisingly – lead to reduced profitability of sourcing in these markets. This is because procurement managers are often urged to place orders with their Chinese subsidiaries in order to increase their economies of scale and to speed up the learning-curve effect. In many of these cases at least in the short- and medium-term sourcing from independent suppliers was clearly cheaper.

To avoid or minimise such negative effects of corporate strategy on procurement, those responsible for purchasing and logistics should ideally be brought in when strategic goals for the company as a whole are being defined and developed.

Companies that aim to engage in successful long-term global sourcing should carefully assess the following issues before they start to get involved in new markets:

- Which markets are profitable for which products? Which markets do we want to enter, and which do we want to leave?
- With whom should we cooperate in each sourcing market?

If, for strategic reasons, our company is one of those that is prepared to accept cost disadvantages over sourcing at home when purchasing in China or other growth markets:

- Do we have a suitable way of measuring the success of these strategic decisions?
- For each product we acquire at a disadvantageous cost, do we have a roadmap outlining how and when sourcing activities in China will become profitable?
- If these objectives are not achieved, do we have a plan B that will benefit our company?
- If we wish to take part in the general trend of increasing sourcing from subsidiaries, do we know when it makes sense to create new production units, and when buyouts or strategic investments would be more suitable?
- Finally, what demands do these new operations and acquisitions place on our global management capacities and what implications do they have for our global corporate structure and processes?

How can PricewaterhouseCoopers help companies formulate their global sourcing strategy?

On behalf of its clients, PwC investigates which products are suitable for sourcing in China and which companies could be suitable partners. But we do not limit ourselves to just analysing potential partners. We also investigate the investment goals and the legal and tax structuring of such alliances. If companies prepare well for such cooperative projects, it is our experience that they can then concentrate far better on attaining other strategic goals, such as expanding in the Chinese market.



Peter Albrecht
Eurofirms Industrial
Products Leader
and Board Member of
PricewaterhouseCoopers
Germany
Tel.: +49 201 438-1518
peter.albrecht@de.pwc.com

### Implications for industrial manufacturing companies

Mr Albrecht, this study shows that – in general – sourcing in China has become an important pillar for German companies. Is this also true for Germany's industrial manufacturing companies? What implications do the results of the study suggest for them?

German industrial manufacturing companies are currently lagging slightly behind their peers in other sectors in some of their activities in China. Industrial manufacturers source around 9.6% of their total procurement in China, compared to an average of 14% in the chemicals and pharmaceuticals industries. Fewer industrial manufacturing companies have invested in purchasing staff on the ground in China, either as direct employees, or as employees of joint ventures or allied companies. Industrial manufacturing companies are somewhat less likely to use local Chinese providers for logistics, warehousing, and quality control.

Respondents from industrial manufacturing companies also reported a somewhat less stringent level of monitoring of Chinese business partners than did their peers in other sectors. This lower level of supervision may in part explain the reduced use of Chinese service providers; in the absence of a rigorous monitoring process, industrial manufacturing companies may have a lower level of comfort in choosing local partners. We should note here that the industrial manufacturing sector sample also included a greater number of small enterprises (fewer than 500 employees), and smaller companies tend to exert less supervision over Chinese service providers.

Also striking was the relative tendency of industrial manufacturing respondents to rate costs of various aspects of the logistics process as "low", including management costs, warehousing costs, customs clearance, and transport insurance. At the same time, in all of these areas, a significant number of respondents – in most cases more than 1 in 4 – were unable to estimate whether their costs in these areas were high, less high, or low. A mere 2% of industrial manufacturing companies rated the costs of transport insurance as high, but 28% were unable to assess these costs. Similarly, while only 11% of industrial manufacturing companies rated warehousing costs as high, 27% had no view on these costs.

The lack of transparency around a number of cost factors in the logistics of sourcing from China may be hurting the bottom line. Industrial manufacturing companies who want to improve the profitability of sourcing in China may need to invest more in their capabilities on the ground in China, both in terms of local procurement staff and in their ability to select and monitor local partners.



Volker Fitzner Global Chemicals Advisory Leader Tel: +49 69 9585-5602 volker.fitzner@de.pwc.com

### Implications for chemical and pharmaceutical companies

China is of particular importance to the chemicals and pharmaceuticals industry. China is now the third largest chemical and pharmaceutical producer behind the USA and Japan. German companies in this sector reported sourcing around 14% of products and raw materials from China.

#### Where are chemical and pharmaceutical companies looking to meet their sourcing needs?

The mid-coastal region is of special interest to German chemical and pharmaceutical companies, other industries are much less present in this region. Investing in the inland regions close to the coast also looks to be an effective strategy for chemical and pharmaceutical companies looking to offset the higher production costs of the big coastal metropolitan areas like Shanghai and take advantage of investment incentives.

## Who is providing services around sourcing to the chemicals and pharmaceuticals industry?

Chemical and pharmaceutical companies are more likely to use employees of subsidiaries or JVs for purchasing in China compared to other industries. They are also more likely to make decisions around logistics from Germany alone. Only around a third include Chinese colleagues in operational decisions.

At the same time, chemical and pharmaceutical companies are more likely to use Chinese service providers overall than other industries. They are also more likely to use Chinese service providers for packaging, with substantially more choosing this option, compared to peers in industrial manufacturing or the automotive industry. They are also somewhat more likely to use Chinese service providers for warehousing and quality control, but less likely to use Chinese companies to handle customs issues.

German chemical and pharmaceutical companies perform substantial oversight of Chinese partners – nearly half of the surveyed companies in the sector report that they dictate procedures to Chinese service providers. Only about a quarter give companies a free hand or take a middle road. This extra level of monitoring may give companies in the sector more confidence in their local partners.

### What was the view of respondents in the chemicals and pharmaceuticals industry around costs?

German chemical and pharmaceutical companies are most concerned about pure shipping costs – half of them viewed these as high, more than peers in other industries. In contrast, under a third described quality control costs as high, a rate lower than in other industries. One-fifth of chemical and pharmaceutical companies estimate costs of warehousing as high, and somewhat fewer rated indirect management costs as high.

#### How do chemical and pharmaceutical companies see the future of the region?

The German chemical and pharmaceutical companies we surveyed were more likely to expect that innovative new transportation methods will be evolved. Chemical and pharmaceutical companies seem to be especially hoping for a liberalisation of the logistics markets. Many companies would prefer to transport their dangerous and fragile goods via specialised logistics providers with double-hulled containers. Currently the number of Chinese service providers with the know-how and technology to service these customers adequately is limited.

If you would like more information or have any questions for our authors and experts, please contact us via telephone or email.

Text source/download of full original report in German

Beschaffungslogistik im China-Geschäft: Kosten – Prozesse – Strategien. Published by PricewaterhouseCoopers, *March 2008, 109 A4 pages* 

www.pwc.de/de/industrielle-produktion

### G Methodology and description of sample

This study on logistics and sourcing in China presents the results of a survey of a total of 203 German companies. teleResearch Mannheim, an independent market research company that guarantees data protection and ensures the anonymity of participants, carried out telephone interviews based on a fully structured questionnaire between 14 August and 7 September 2007. The interviews generally lasted about 20 minutes.

Addresses were provided by the Bundesverband Materialwirtschaft, Einkauf und Logistik e.V. (BME). 1,274 addresses were used for the survey, taken from the complete company member database supplied by BME. The 203 longer interviews were supplemented by 378 short interviews with companies not involved in sourcing in China. A separate field report was also prepared.

Those surveyed were (chief) buyers and (chief) logistics executives in companies of different sizes. The majority of those surveyed, 63%, were heads of purchasing or logistics. 12% were divisional heads or team leaders in purchasing or logistics. Six percent each of those surveyed were heads of materials management or buyers respectively, seven percent were heads of (main) departments and five percent were managing directors, owners, members of the management board, or authorised signatories. The overwhelming majority of those surveyed, 84%, were members of companies that specialise in manufacturing. 42% were engaged in industrial manufacturing, machinery and equipment, 14% in the automotive industry (suppliers and vehicle manufacturers), 11% in the electrical or electronics industries and ten percent in the chemicals or pharmaceuticals industries. A minority were trading organisations (nine percent) and service providers (seven percent, mainly financial services).

As some companies indicated they were active in a number of these sectors, they were asked for their main industry focus (Figure 27).

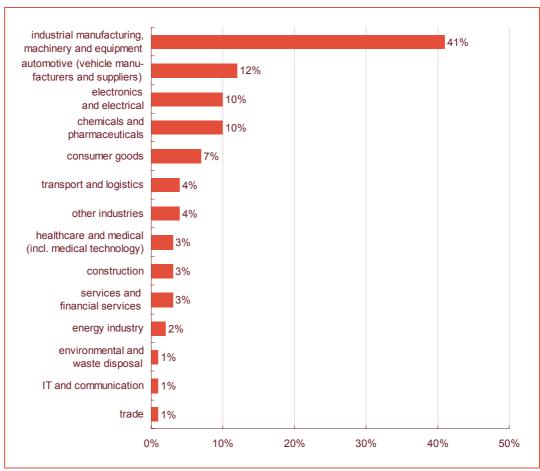


Fig. 27 Main industry focus of companies surveyed

At 91%, the vast majority of the companies surveyed have employees in more than one country. Only nine percent of those surveyed are based entirely in Germany. 12% of internationally positioned companies employ fewer than 500 people in total worldwide. 28% have between 500 and 2,000 employees globally, 35% between 2,000 and 10,000, 16% between 10,000 and 50,000, and nine percent have over 50,000 employees in total around the world (Figure 28).

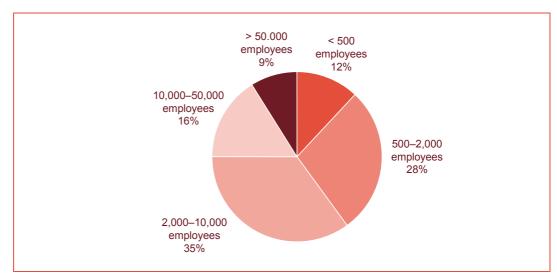


Fig. 28 Total global employees of companies surveyed

One-third of the companies surveyed employ fewer than 500 people in Germany, 41% between 500 and 2,000, 15% between 2,000 and 5,000 and one-tenth employ over 10,000 people in Germany.

At 43%, a large proportion of the companies surveyed are limited liability companies (GmbH). 26% are public limited companies (AG), and a further 26% have the legal form of a limited partnership with a limited company as partner (GmbH & Co. KG). Three percent are simple limited partnerships (KGs) and two percent of those surveyed have a different legal form.

Only eight percent of the companies surveyed had global sales in their last financial year of under €50 million. A quarter of those surveyed had global sales of between €50 million and €250 million, 21% achieved sales of between €250 million and €500 million, twelve percent sales of up to €1 billion and 30% had global sales of over €1 billion (Figure 29).

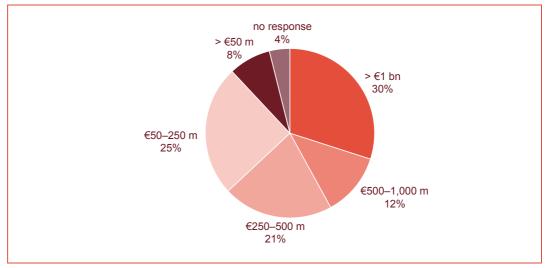


Fig. 29 Annual sales of companies surveyed

#### Services and contacts

Do you want to critically evaluate your existing sourcing activities in China? Are you considering entering the Chinese market? Do you want to secure your existing investments for the long term or perhaps expand them in the future?

Whatever your concern, at PricewaterhouseCoopers you've come to the right place. At PricewaterhouseCoopers (www.pwc.com) more than 120,000 people in 144 countries connect their thinking, experience and solutions to build public trust and enhance value for clients and their stakeholders. Our network of industrial products partners and staff provide industry-focused assurance, tax and advisory services to companies around the world. Our clients include a wide range of companies in the top-tier, midmarket and private sectors, as well as financial institutions and government bodies.

In Germany, PricewaterhouseCoopers China Business Group provides support for manufacturing and service companies with business interests in China, offering a wide range of services such as audits of financial statements and specialised audits, investment advice and international tax planning. In China, PricewaterhouseCoopers is the market leader, with some 9,500 employees at twelve locations.

Please contact your local PwC contact or our Global Industrial Products Leader Graeme Billings for further information.

### PricewaterhouseCoopers Europe and Germany

#### Harald Kayser

Automotive Leader and Leader China Business Group, PricewaterhouseCoopers AG Wirtschaftsprüfungsgesellschaft, Germany

Tel.: +49 511 5357-5685 harald.kayser@de.pwc.com

#### Peter Albrecht

Eurofirms Industrial Products Leader and Board Member of PricewaterhouseCoopers AG, Wirtschaftsprüfungsgesellschaft, Germany

Tel.: +49 201 438-1518 peter.albrecht@de.pwc.com

### PricewaterhouseCoopers Global

#### **Graeme Billings**

Global Industrial Products Leader Tel: +61 3 8603-3007 graeme.billings@au.pwc.com

#### Klaus-Dieter Ruske

Global Transportation & Logistics Leader Tel: +49 211 981-2877 klaus-dieter.ruske@de.pwc.com

## Bundesverband Materialwirtschaft, Einkauf und Logistik e. V. (BME)

The BME, the German association for materials management, purchasing and logistics, founded in 1954, provides services to some 6,000 individual and corporate members, including the top 200 companies in Germany and many medium-sized enterprises. As a network promoter, the BME encourages the exchange of experience between companies and with research organisations, for both buyers and suppliers. The Association is open to all industries, types of company and sectors, including industry, trade, banks, insurance companies, public procurers and service providers.

#### Bundesverband Materialwirtschaft, Einkauf und Logistik e. V. (BME)

Bolongarostraße 82 65929 Frankfurt Tel.: +49 69 30838-

Tel.: +49 69 30838-100 Fax: +49 69 30838-199

info@bme.de www.bme.de www.pwc.com