



the way for the launch of China's crude-oil futures. The Shanghai International Energy Exchange Ltd., a unit of the Shanghai Futures Exchange in the FTZ with a registered capital of RMB5 billion, obtained its business license on November 6, 2013. It will operate international marketplaces in crude oil, natural gas, petrochemical products and derivatives. It aims to launch futures trading of crude oil, 380cst fuel oil, gasoline, diesel, LPG, LNG, olefins, aromatic hydrocarbons, synthetic resins and synthetic rubber. Petrochemical companies could actively participate in related futures trading.

Companies registered in the FTZ could do FOB trade financing with lower financing costs and lighter foreign exchange controls.

Petrochemical companies could set up cross-border cash pools inside the FTZ to maximize the use of funds.

Petrochemical companies, via their units inside the FTZ, could take advantage of the comparatively higher deposit interest rates (or return of wealth management products) while locking foreign exchange rates, in order to gain relatively lower interest rates for financing and to make higher profits.

They also can adjust their sales strategy to place equal emphasis on domestic and international markets so as to keep market share.

Companies shall also improve their professional services in trade and logistics by providing one-stop, environmental-friendly value-added services for trading partners, both upstream and downstream.

c. Funds management

Petrochemical companies can consider setting up funds management centers inside the FTZ to integrate their domestic and offshore fund platforms.

d. Processing trade

First, the change in trade development

will help the petrochemical industry lower trade cost. Companies could increase their competitiveness by establishing operation centers in the FTZ, expanding cross-border payment and financing functions, participating in the international trade of energy products and industrial raw materials, as well as developing more offshore businesses. Processing trade in the FTZ will not be taxed.

Next, the innovation in shipping models would make petrochemical logistics easier and more efficient. The Shanghai FTZ will help lift Shanghai's service capability as a global shipping center, giving a boost to sectors such as shipping finance, international shipping, international shipping management, and international shipping brokerage. All these will help petrochemical companies, in particular those based in the Yangtze River Delta region, cut costs and boost efficiency in purchasing raw materials and in exporting products.

Last but not least, the opening up of the financial service sector could benefit petrochemical projects in terms of financing.

Petrochemical companies could consider building refineries for export purpose using bonded crude oil to process refined oil products for export.

e. Warehousing and logistics

Spare parts imports and exports are duty free; the close proximity of shipyards makes it easier to repair ships; warehousing costs are comparatively low.

Firms will undoubtedly build new tanks as well as using existing spare storage facilities as delivery points of crude oil futures.

f. Financing & leasing

Companies could further lower financing and lease costs by taking advantage of the relatively low offshore financing prices inside the FTZ. ■

Correlation

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Introduction

China's National Bureau of Statistics publishes an annual statistical yearbook, with data reaching up to the year 2012. Among the material provided is data on industrial revenue and profit by industrial segment, with the segment "Manufacture of Raw Chemical Materials and Chemical Products" reflecting the status of the chemical industry. We used this data to analyze the correlation between ownership type of chemical company and the sales and profit development during the period from 2006 to 2011.

The analysis focused on trends rather than absolute figures. Therefore even if the reliability of the data is difficult to judge, it should still be possible to discern trends assuming that any methodological issues in obtaining the data are fairly consistent within the relevant period.

Key result

- The ownership type of chemical companies is highly correlated with their recent sales and profit growth
- Private companies have the highest sales growth followed by foreign companies while state-owned enterprises have the lowest growth. Sales per employee are much higher for foreign companies than for domestic ones (both private and SOEs). However, private companies have a much higher growth



between Ownership Type and Sales/Profit Growth in China's Chemical Industry

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rate of sales per employee

- For profits, the picture is somewhat similar, with private companies having highest growth followed by foreign companies and SOEs. Again, profits per employee are much higher for foreign companies but private companies are catching up due to their higher growth rate of profits per employee

- For all ownership types, sales per employee are growing at rates above 10% per year, indicating increased worker productivity

- However, productivity increases are lowest for foreign companies which started out with the highest sales per employee. This suggests a gradual convergence of worker productivity between foreign and private chemical companies

Revenue Development

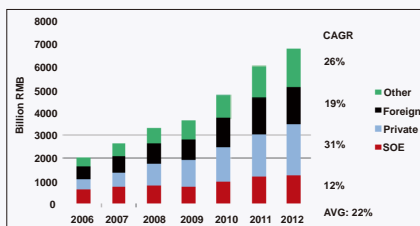


Fig. 1: Revenue of chemical companies in China by ownership type

Revenues of the chemical industry in China more than tripled between 2006 and 2012. Key driver was the growth of private companies, which increased their share of revenues from 22% to 33%, a fivefold increase in absolute terms. At the same time, SOEs only about doubled their sales. The

revenues of foreign companies increased by about a factor of three, indicating a growth rate slightly below the overall market.

Ownership	Sales per employee (1000 RMB)						CAGR
	2006	2007	2008	2009	2010	2011	
SOE	577	719	786	951	758	1209	16%
Private	432	535	619	885	718	1189	22%
Foreign	1139	1317	1388	1637	1407	2063	13%
Other	423	526	630	814	698	1119	21%
Average	568	696	775	1001	824	1321	18%

Tab. 1: Sales per employee by ownership type

All chemical companies independent of their ownership type strongly increased their sales per employee, with an average annual growth rate of 18% across the different ownership types. Those ownership types with higher sales per employee at the beginning of the observation period (in particular, foreign companies, but also to some extent SOEs) showed slower growth in sales per employee during the observation period. This seems plausible as productivity gains are most easily achieved if the starting productivity is low.

For foreign companies, this development may turn out to be somewhat worrying. In 2006, the average employee in a foreign chemical company achieved sales of 265% of an employee in a private domestic company. In 2011, this had shrunk to only 175%. During this period, private companies also caught up with SOEs with regard to sales per employee.

Profit Development

Profits of the chemical industry in China increased approximately by a factor of four between 2006 and 2012 – profits thus increased faster than sales (CAGR of 24%

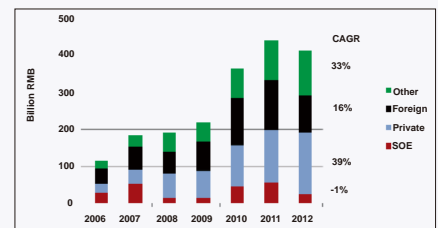


Fig. 2: Profit of chemical companies in China by ownership type

compared to 22% for sales). Similar to sales, private companies were the key drivers for the growth in profit. They approximately doubled their share of profit from about 20% to 40%, both at the expense of SOEs (whose share of profits was reduced from about 25% to about 7%) and foreign companies (reduction from about 36% to about 24%). Absolute profits of foreign companies increased approximately by a factor of 3.5 – an increase that explains the excitement about the Chinese market in multinational companies despite the relative underperformance shown by the data above.

Ownership	Sales per employee (1000 RMB)						CAGR
	2006	2007	2008	2009	2010	2011	
SOE	27	53	15	45	21	58	17%
Private	22	31	42	65	45	90	32%
Foreign	85	112	93	170	120	182	17%
Other	22	29	48	62	42	87	32%
Average	32	48	45	77	50	97	25%

Tab. 2: Profit per employee by ownership type

Profits per employee rose strongly for all ownership types of chemical companies. However, this growth was much lower for foreign companies and SOEs than for private companies. In fact, private chemical



companies obtained substantially higher profits per employee in 2011 than SOEs even though they were still slightly lagging in 2011. And the gap to foreign companies also decreased substantially, being reduced from a factor of four to a factor two within the observation period.

Employee Development

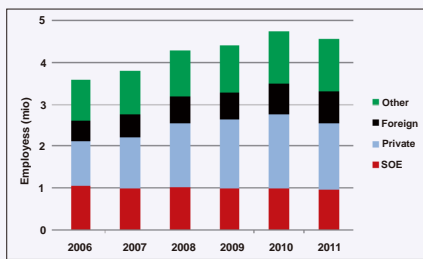


Fig. 3: Employment development in the Chinese chemical industry

Employment in the chemical industry rose by about 27% in the period from 2006 to 2011. This is a substantial increase, but it is small compared to the increase in sales (+196%).

Employment by SOEs slightly declined in absolute terms and more strongly in relative terms (from about 30% to about 21% of all employees) but correspondingly rose for all other ownership types, particularly for private companies (+6% of relative share of employees). The percentage of employees working for foreign companies still increased (by about 3%) despite the decreasing sales share of foreign companies.

Other results

Among all ownership types, SOEs are by far the biggest companies, with the average chemical SOE reaching annual sales of about RMB1 000 million in 2011. Foreign companies are less than half this size (RMB440 million) and private companies are again much smaller (RMB157 million of sales). Sales per company grew by more than 20% per year for all companies,

though it is fastest for private companies (the number of SOEs shrank substantially during this period, thus sales per SOE grew faster than combined SOE sales).

Profitability (total profits divided by revenue) of all types is highest for foreign enterprises, reaching 8.7% in 2011. However, private companies showed the strongest increase in profitability during the observation period and now reach 7.5%, not too far below the foreign companies. State-owned chemical enterprises showed the lowest profitability as well as the lowest growth rate of profitability and thus are likely to remain the least profitable of all ownership types.

Conclusion

The analysis suggests that private companies are the big winners in the Chinese chemical industry in the recent past. They substantially increased both their share of sales and their profits. In contrast, SOEs have been on the defensive – their growth was significantly below market growth, and consequently their overall market share decreased. They may either have to change their strategies, or accept their role as a provider of employment and thus social stability rather than as profit-driven enterprises.

For foreign companies, the analysis may seem somewhat disillusioning. While the growth rates of foreign companies in China may seem high compared to global rates, they are not impressive if compared with those of local private companies. This development is most likely the consequence of a shrinking technology and knowledge gap between foreign and domestic companies. Given the rapid advances of local companies within the relatively short observation period, maintaining a high market share in China will be a challenge to foreign chemical companies. In the long run, competition between foreign and domestic chemical companies will be one between

comparable players, much like competition between, e.g., German and US chemical companies in the US or the German market.

Notes on the analysis

For the analysis above, data from the China Statistical Yearbook (editions 2007-2013 for sales and profit, 2007-2012 for employee numbers) was used. Unfortunately no complete data was available for the period before 2006, and for 2012, no data on the number of employees was available.

The industry segment “Manufacture of Raw Chemical Materials and Chemical Products” was used as a proxy for the chemical industry as a whole (there are some other segments that may at least partly be relevant to the chemical industry, e.g., manufacture of rubber and plastics products, however, in these segments the distinction between chemicals production and the production of final goods is less distinct).

The statistical yearbook reports data for the whole industry segment as well as for three different ownership types:

- State-owned and state-holding companies (this includes stock-market listed companies which are majority-owned by the state)
- Private companies are controlled by individual natural persons
- Foreign-owned companies are controlled by entities outside of mainland China

The ownership share not accounted by any of these three types is still fairly large but is not split up further for individual segments. The vast majority of this segment (more than 80%) is accounted for by limited liability corporations with 2-50 investors. As such, this company type is most closely related to private companies as the segment is neither state- nor foreign-owned, and presumably driven primarily by profit motives. ■