Electrolytic Manganese market annual report 2008

Electrolytic Manganese (Custom code, 8111001000 unwrought manganese) series products include manganese flakes, ingots and powder. The flake appears like steel in abnormity, with one side bright and the other coarse. The color is about silver and when processed into powder, it turns silver gray. The material is apt to be oxygenated and can dissolve in acid permuting hydrogen. Manganese metal has two different ways of abstraction from the mines, one by caloric ways and one by electrolytic methods.

As the purity is higher by the second method, electrolytic way has become the dominant production method. The material can be used to increase the rigidity of alloy metals including Al-Mn, Cu-Mn and others. Manganese additives can improve the intensity, tenacity, wear resistance and corrosion resistance of the alloys. Long ago, the material has been used as one of the raw materials in the steel production, aluminum alloy, magnetism materials, and chemicals industry due to the high purity.

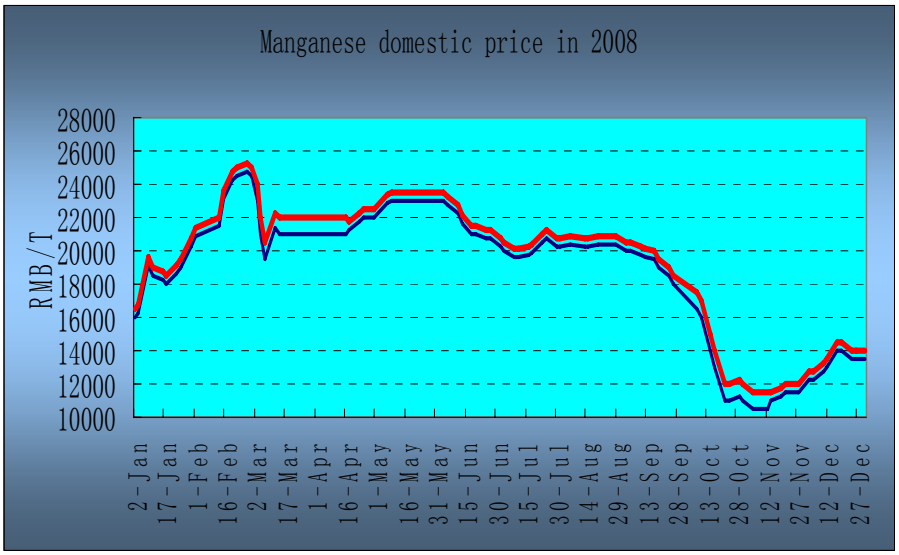
Demand of manganese metal is about 500,000 tons yearly in global market, with about half for domestic use in China, about 80,000 tons for stainless steel production, 20,000 tons for aluminum alloys and 60,000 tons for manganese tetroxide.

China is the dominant supplier of manganese metals in the world market. Till 2007, the production ratio already has been up to 95% and this figure keeps increasing with the capacity enlarging in China. Currently, manganese production capacity is over the demand of the material, which has already been realized by the government. A series of regulations like raising the export taxes, washing out backward capacity are being carried out.

The production output is reported to be around 1.13 million tons in 2008 with about 0.24 million exported. Due to the economic downturn, the export shrinks greatly to less than one fourth of the total output.

Part Ⅰ Domestic Market Review

Looking back to the market in 2008, the domestic market had some impressions in different time sections.



1.1 First quarter, Manganese price rockets high and then retreats back with the supply in sharp decrease

Manganese market has usually been quiet in the first quarter of the year. The downstream industry is in low demand and still has some materials in stock. So the market is in thin trading and the price often slides during this period. However, due to the widespread snow-hit in South China, manganese production almost collapsed due to the severe weather, power cut and traffic block for weeks. Manganese supply became very tight with the output record low. Manganese price was pushed up as a result. Except the business was dull because of the Spring Festival when the price dropped a bit, most times in the period, manganese price was moving upward from about RMB16,000/t ex works early the year to an annual high of about RMB25,000/t ex works late February.

With the price hiking, demand of manganese metal was restrained, leading to lower demand and fewer deals. Meanwhile the price drop of nickel in the global market also depressed the participants' confidence about the market in the coming months; manganese price retreated to about RMB24,000/t ex works late February, and then RMB20,500/t ex works in early March due to the panic of further recession. However, as the downstream market slightly recovered, manganese price rose gradually to about RMB21,000-22,000/t ex works late this quarter.

1.2 Second quarter, Manganese price rose again promoted by the higher production costs

In the second quarter, both the demand and supply of manganese metal recovered gradually. The output of stainless steel was the highest this quarter in 2008 and thus demand for manganese metal also increased. On the production side, sulfuric acid price started moving up to over RMB2,000/t from about RMB1,300/t in the first quarter. In the center of the second quarter, manganese price increased to about RMB23,000-24,000/t ex works again and went stable at this level for weeks.

During this period, the earthquake in Wenchuan, Sichuan had brought worry that the supply of manganese metal would suffer from this natural disaster. More orders were received from foreign buyers, leading to 5,000 tons more in the export market in July. However, the supply of manganese metal slightly was influenced by the earthquake, and supply remained sufficient when domestic manganese price kept stable. During this period, fewer deals were concluded in China and the economy had seen some indications of slowdown. Apparent consumption of stainless steel decreased in the second quarter in China and the housing industry started to appear stagnant. In late June, manganese price already dropped to about RMB21,000/t ex works.

1.3 Third quarter, Manganese market quiet in the summer time with the price sliding

Since July, the market had been fluctuating very frequently. In July, the western went into summer holiday and then the Olympics was held in Beijing and In September, the economic recession finally became the hot topics in the market economies. Due to the thin trading, manganese price fell to about RMB20,000-20,500/t ex works, the lowest in 2008. Though price of raw materials also went down, a time lag existed within and many suppliers suffered great losses. Some smelters started to cut production due to no deals to make and no profits at all. The downstream industry also followed suit in reduction of output and lower prices.

In late July, many participants were expecting new export duty to come out Since August, and many suppliers tried to push up the prices to about RMB21,000/t ex works. After the export adjustment was released, manganese was not listed and the price went back to RMB20,500/t ex works and remained in the range of RMB20,000-21,000/t ex works during the Olympic month. Suppliers expected the demand to increase in September but found the market even more stagnant as the financial crisis finally spread into the world, forming the severe economic recession. Downstream stainless steel mills cut down production one by one and the price for most metals dropped significantly. Manganese price fell to below RMB19,000/t ex works in late September. More manganese smelters halted production but helped nothing to hold the price from sliding.

1.4 Fourth quarter, Output decrease and price drop to the bottom line before rebounding

The economy recession had been worsening in the last quarter of 2008. The world leading countries like the US, Japan all announced recession. China also faces a shrink especially on the exports. Less manganese was exported during the period when the domestic demand of manganese metals also decreased. Manganese price fell rapidly to about RMB11,000/t ex works in middle October. Many manganese smelters halted production after great losses. Some long term contracts were delayed or cancelled due to the decreasing demand and lower price. More cases of contract breach were reported.

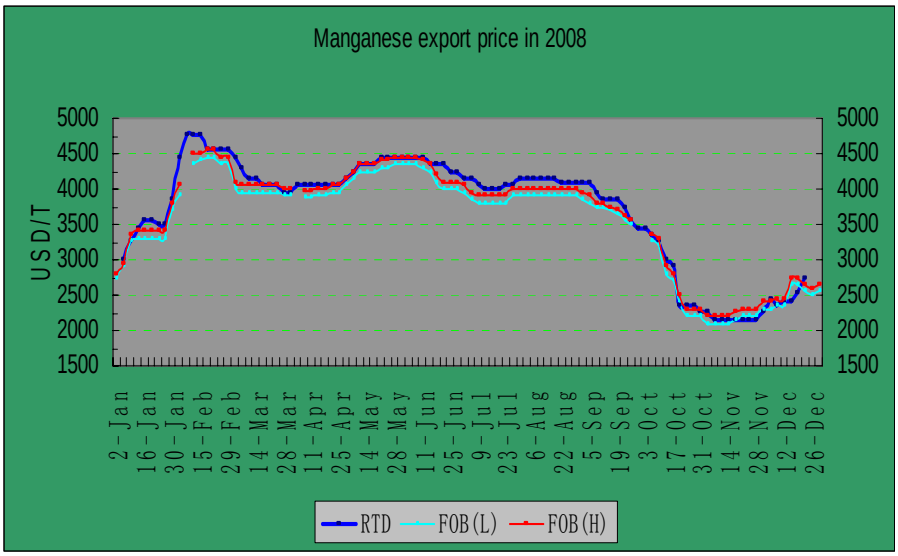
As the world was striving for some methods to stimulate the consumption, participants gained some confidence about the future market, especially after the four trillion investments in China. Some participants started to enter the market for some small deals

to order some materials. And after a long time of low output, the supply also tightens in the market. Manganese price went up late this quarter to about RMB14,000/t ex works. Some smelters kept in operation according to orders from regular buyers.

Part Ⅱ Manganese Export Market Analysis

2.1 Export price analysis 2008

Manganese export price movement is about the same as the ex works price. Since Jan 1st, manganese export duty was raised to 20%, up by 5%, leading to an increase of 150-200/t. With the output decrease in domestic market and higher ex works price, manganese export price rose gradually from USD3,000/t FOB early the year, till USD4,500/t in middle February, the highest record this year.



Notes, RTD Chart is the price in warehouse Rotterdam; FOB(L) refers to the lower side of the FOB Chinese Main Port price; FOB(H) refers to the higher side of the FOB export price. As there was no offer somewhere during the holidays, the curve has some gaps.

However, few deals had been concluded during the price increase when the foreign markets kept quiet during the first quarter. According to the statistics from the Customs, export slid to less than 15,000 tons in February, the lowest in the whole year, less by 7.76% compared to the previous year. Some deals were delayed maybe due to the snowstorm in South China for the moment. After that, manganese export increased a lot in March but the price dropped to USD4,000/t FOB late March.

Manganese market was wholly active in the second quarter with the export quantities increasing. After the earthquake, export quantity rose to over 26,000 tons in June, with an increase by 23.75%; then decreased by 5,300 tons after a drop of 21.43%. During this period, manganese supply had been sufficient with the price stable at about USD4,200-4,400/t FOB. The high production cost had been the main support to the high price. Few deals were reported at the price peak of about USD4,500/t and the price soon

slid to about USD4,000-4,200/t late the quarter.

Manganese export market was quiet in the third quarter with the foreign participants in holiday. Manganese price fell and lingered at about USD4,000/t FOB. Many Chinese suppliers expect the demand and price to go up in late August or early September and many of them kept delivering the materials to foreign warehouses getting prepared before that. But due to the financial crisis, manganese export market was even more stagnant, with the demand decreasing and the price dropping continuously. Till early November, manganese price slid to about USD2,200/t FOB, down by USD1,800-2,000/t within two months.

The foreign economy entered downturn in October and November with the downstream consumers leaving the market. Moreover, the supply kept sufficient in the spot market. As a result, the export shrank by 24.36% in October and 12.18% in November. The export in November was the least this month only a bit more than in February. Export price kept at about USD2,100-2,200/t FOB. Thin deals were concluded in the market with the stocks gradually consumed. Since late November, the price rose a bit from the bottom line and more participants returned to arrange some materials for the coming New Year. Manganese export increased in December, and the price also rebounded to USD2,500-2,600/t FOB in late December.

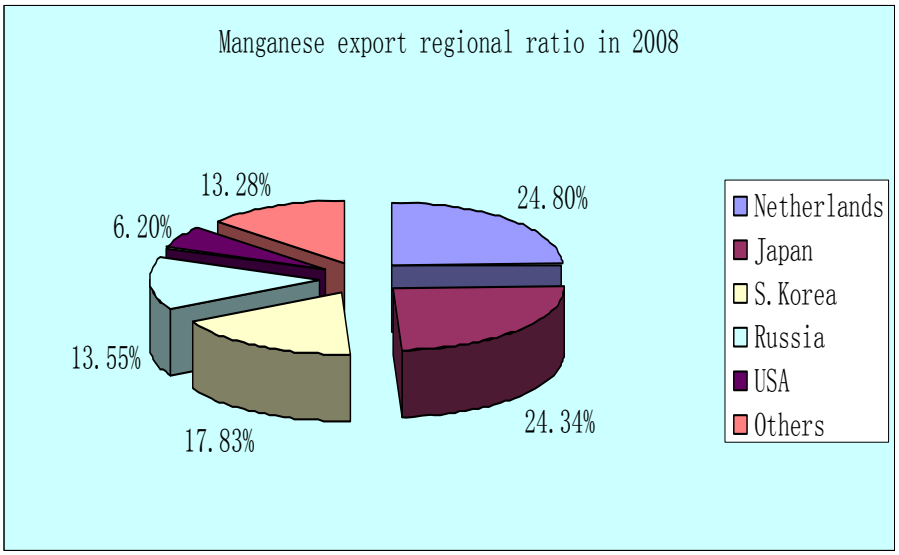
2.2 Export quantities analysis 2008

Manganese export shrank by 41,328 tons in 2008 compared with the previous year, down to 240,547 tons. Meanwhile, the domestic output remained high, adding the reliance to the domestic market.

Chart 3 Manganese export to main foreign markets 2008 (/MT)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Nether	4277	7033	7354	2654	4181	5593	4267	4901	6700	6119	3630	3093	59772
Japan	4388	2420	6069	5342	5517	5828	4847	6179	5203	4286	5148	3326	58553
S.Korea	2032	1308	2732	4640	4432	6188	5533	3661	4116	2480	3316	2461	42899
Russia	2812	1389	2187	3263	2434	3666	1322	2930	3786	2576	1986	4252	32603
USA	760	996	2213	1080	1052	1444	1941	880	2076	549	899	1121	15009

Regionally, the main export destination remained Japan, South Korea, Netherlands, Russia and the US, with a total quantity of 208,836 tons, over 86% of the general export. Accordingly, export to Japan, Netherlands, the US shrank by 29%, 23% and 46% respectively while the export rose by 70% to South Korea and 139% to Russia. South Korea becomes the third export destination and Russia the fourth.

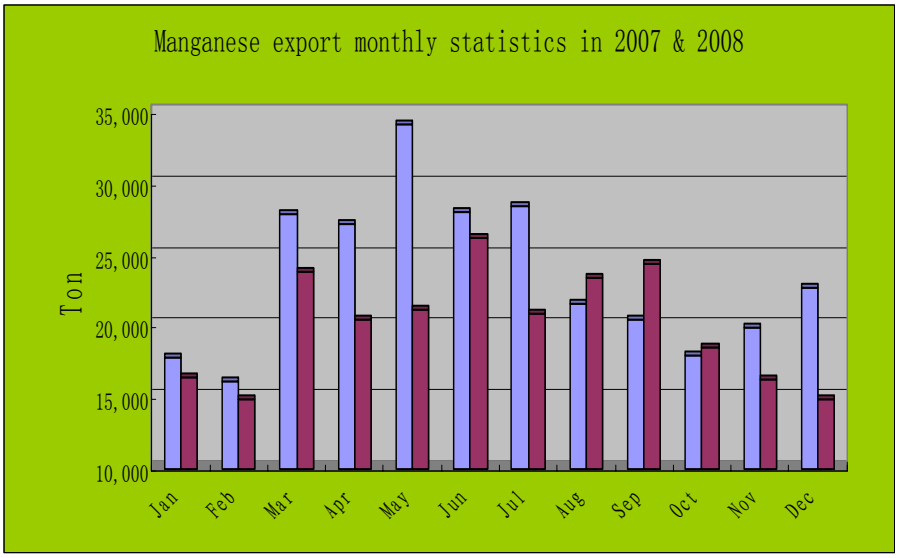


Other than the first two months this year and some periods influenced by the export duty policies and other circumstance changes, to be analyzed in the next part, the export to Japan had been very stable of about 5,000-6,000 tons most of the months. Export to Japan had been instable, in either very large or small quantities. In March, the export to South Korea was less than 3,000 tons and but rose gradually to the peak in June over 6,000 tons, and then decreased to below 3,000 tons in October.

Compared with the export to Asian countries, the export to Netherlands changed more acute. Due to the longer delivery date, the middle market is more active. Many deals are in the form of warehouse transaction with some Chinese suppliers owing stocks in the spot market. The stocking in the warehouse adds to the flexibility of the market based on an expectation towards the demand and price changes in the future. Export to Netherlands was above 7,000 tons in February and March, when the export business was dull as a whole. And after each month with large quantities of the material delivered, the quantity slid quickly in the next month with 4,700 tons less in April compared to March, 2,489 tons less in November compared to October.

Russia is a newly emerging market. The export to Russia was more than double in 2008 and in the first three quarters, the export had been on the increase. Meanwhile, the export to the US decreased greatly in 2008. Most times, the export had been below 1,000 tons except March, July and September with the quantity at around 2,000 tons.

The total export in the first half of the year decreased by 20%, with 27.88% shrink in May, 24.78% in April. And in the second half of the year, the export decreased by 28.71% in November and 26.46% in July. Only in three months the export rose, August, September and October with respective increase by 8.07%, 19.17% and 2.56%. The largest export monthly is 26,184 tons in June and the lowest in February at 14,387 tons. The export is over 20,000 tons monthly in the second and third quarter.



Part Ⅲ Manganese Market influential factors

3.1 Macro factors influencing the market

3.1.1, from industrial and export policies

Since Jan 1st, 2008, manganese export duty was raised to 20% from 15% in 2007. As the price was expected to move up due to higher costs, many foreign buyers arrange large stocks ahead of the adjustment before the year and others switched to ferromanganese for the production of stainless steels instead of manganese metal, leading to stronger demand and higher price of FeMn in the first quarter of the year. Some manganese producers start to process manganese flakes into low carbonate FeMn.

Since March 1st, China strengthened the enrollment admittance into manganese industry. Total production capacity should be no less than 10,000tpy for single production line and the total capacity for the smelter should be no less than 30,000tpy. The current manganese smelters with capacity below 4,000tpy for single production line would be closed. The new policy aiming at restrict further low-level redundant construction

In late July, a new adjustment to the export duty was under discussion and many participants were afraid manganese export duty might be increased to 25%. Many buyers arranged more deals in advance. During this period, demand for wrought manganese especially manganese briquette increased a lot due to the lower prices for no export duty but 5% tax rebate. And more foreign consumers accepted this material. Except Japan, there were already target consumers in European Union, South Korea, East Europe and Southeast Asia.

Since September 1st, China started to implement ferromanganese export license application, requiring a strict qualification for the export of ferromanganese, with an export of over 3,000 tons of ferromanganese, ferrosilicon and silicon-manganese. However, most manganese smelters only have one item of low carbonate ferromanganese, which hardly reached 3,000 tons yearly.

3.1.2, market outside circumstance

In the first quarter of 2008, the snow-hit in south China almost paralyzed the power and water supply and blocked the transportation. Manganese production suffered greatly and many deals had to be delayed. The tight supply resulted in a rocketing high price of about RMB24,000-25,000/t ex works from RMB20,000-21,000/t and USD4,300-4,400/t FOB from USD3,700-3,800/t.

The earthquake in Wenchuan, Sichuan led to another damage to the normal production of manganese metal. As the earthquake happened in the south, many participants especially in the foreign markets were afraid the supply would reduce greatly, leading to an active purchase in May and the coming months.

In August, 2008, the Olympic Games in Beijing also had been expected to influence the market. With an expectation that the export would be a problem while China was fully engaged in the sports feast, many foreign buyers arranged stocks ahead of time. Actually, during the Olympics, the business was normal with the export steady and the price and demand did not increase after August as expected. In September, due to the economic downturn, manganese price and export both slide to some extent.

3.1.3, Global economic crisis

The butterfly effect of the sub-prime mortgage crisis in 2008, announced a storm in market economy, from the virtual economy to the real economy and from the US to the world. On Sep 15th, 2008, the Lehman Brothers announced its bankruptcy starting the alert of the slowdown of the economy, and then Merrill Lynch acquisition led to the end of investment bank in USA. Market consumer’s consumption index kept sliding. Later, the automobile industry also faced the difficulties of sales decrease and cash turnover. In November, automobile sales slid by 36.7% compared to 2007. Things were mostly on the same condition in other developed countries such as Japan, Germany and British. As the downstream industry went downturn, demand for manganese flakes also decreased.

As a result of economic crisis, many countries adopted methods to promote domestic sales and trading, including some trade protectionism resorts. Trade disputes emerged more frequently, extremely to the export of stainless steel from China including some anti-dumping investments.

Meanwhile, the market credit also got a strike. With the price dropping in the second half of the year, more reports were there for the contract breach. Some contracts were delayed by new contracts by both sides while others accepted new lower prices according to the market condition. Due to the rising trading risks, many exporters were not ready to protect their interests.

To combat the economic recession, many countries tried all their best to stimulate the economy by large investments and some privileges, but as the market fundament is not promising, the economy kept sliding all over the world. The good deeds failed to come into effect in the near term.

3.2 Microeconomics factors

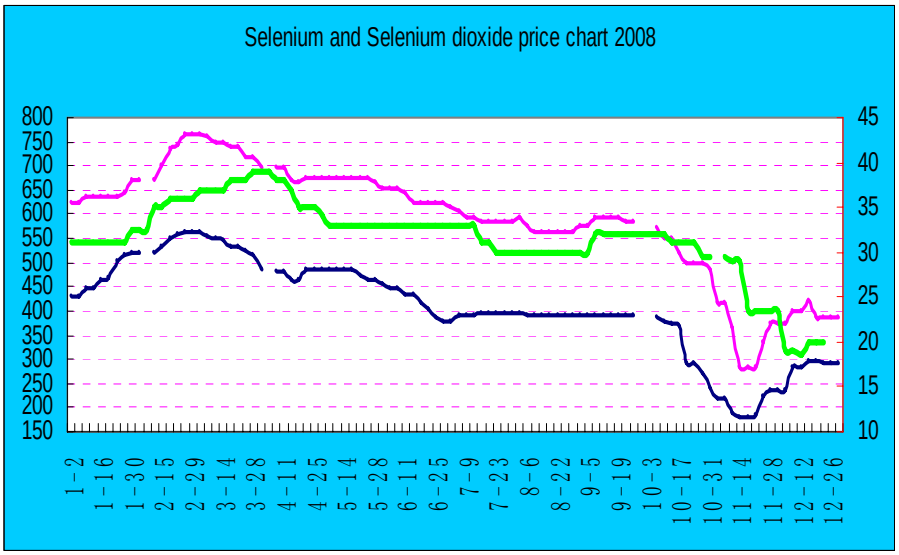
3.2.1, Raw materials market

Manganese production cost kept rising in the first eight month of the year, with the sulfur acid price on the upward continuously. It was about RMB1,000/t early the year and then rebounded in May at the highest. And after the petroleum price dropped sulfur acid price followed suit and dropped to about RMB1,000/t ex works again in September. Till December, the price already had been around RMB300/kg.

And about the power supply, early the year, due to the snowstorm, the power supply was cut in many areas in the south. To ensure the power supply for citizens' daily life, many provinces carried out power restrictions. The production also collapsed in late January and early February. On manganese carbonate ore market, the condition was almost the same in the first quarter, the mining was closed due to the weather condition, and pushed up the price to above RMB1,000/t. Ahead of the Olympics, due to the safety consideration, the mines exploration was strictly controlled and the supply of mines also tightened for some while. After the Olympics, with demand dropping, manganese ore price slid gradually to RMB400/t in middle November. The mines supply slid as well due to the low demand. Till early the last month of 2008, with the manganese price rose a bit and the production increased, more manganese mines were in need, pushing the price up slightly to around RMB700/kg.

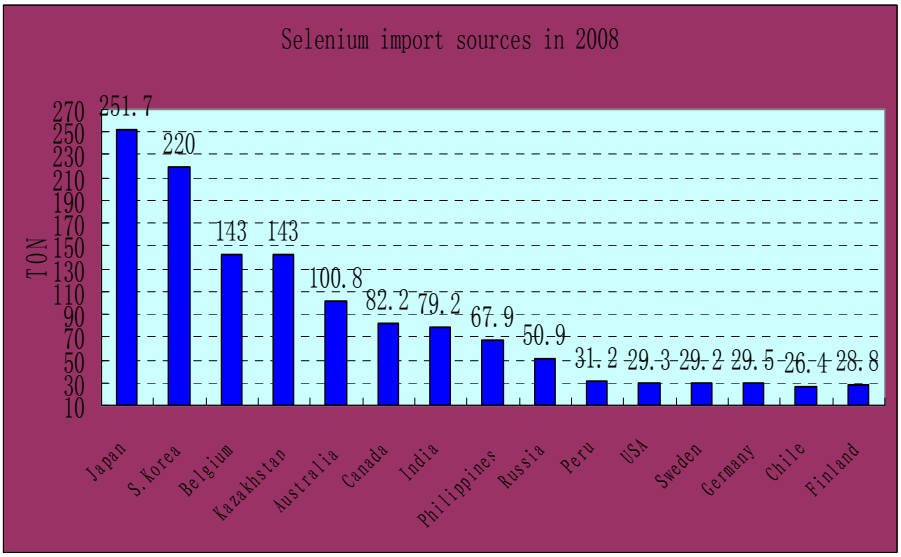
3.2.2 Selenium and selenium dioxide market

Selenium market had been hard in 2008 due to the instability and low performance in the downstream market. Many participants bore great losses this year. The total import quantity is around 1,355 tons in 2008, about 396.2 tons less than in 2007, down by 22.5%. The leading three countries had been Japan, South Korea and Belgium with a quantity of 251.7 tons, 220 tons and 143 tons respectively. Selenium imported from these three countries took up about 45.3% of the total import this year. Due to the strong demand stimulated by selenium dioxide production, more selenium powder came from other countries like Australia, Canada, India and Philippines. Import from Kazakhstan was also huge in January (67.5 tons), May (33.3 tons), July (15.3 tons) and December (12.6 tons). Russia also exported 50 tons to China in two months, with 37 tons in June and 12.9 tons in July.



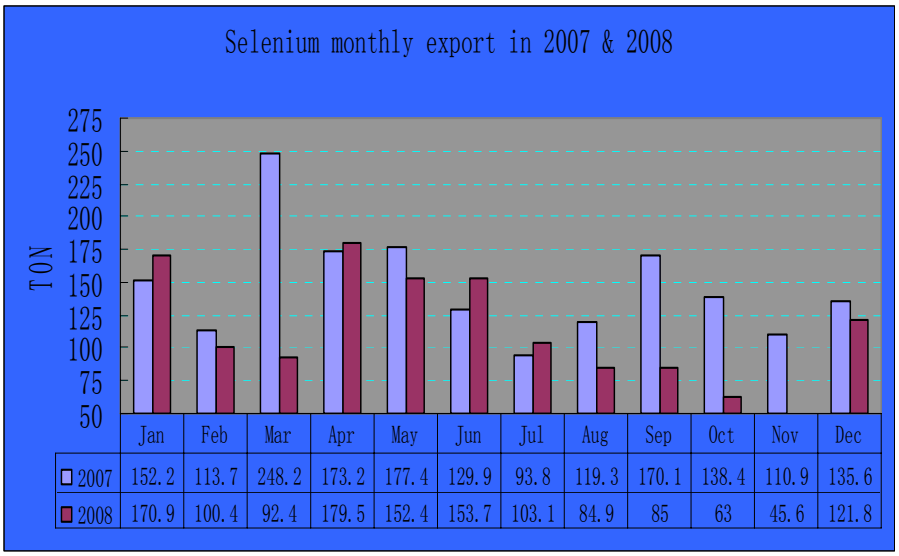
(Pink line stands for domestic selenium powder price; the yellow lines stand for selenium dioxide price; the green line stands for selenium price in Europe.)

As the demand from manganese industry for selenium dioxide is much higher than that of selenium powder from glass and ceramics, more selenium powder is used for the sake of manganese production. As a result, the price was influenced by the manganese market. In the first quarter, due to the low production of manganese metal, demand of selenium dioxide should be low but many consumers were replenishing stocks for the production in the further months and participants in the glass and ceramic industry also returned to the market in March to prepare some raw materials. Selenium market had been active and pushed up the price. Selenium offer from foreign suppliers rose to USD40/lb late the first quarter from about USD30/lb early the quarter. The domestic price rose to about RMB750/kg in late February and then retreated to a normal price level that could be accepted by the downstream buyers.



Selenium importation was the highest in April at almost 180 tons in the second quarter, the

import of selenium powder was stable with a total amount of 485.6 tons in the most active period of the year, taking up 36% of the total import this year. Since the third quarter, selenium import started to slide due to the downturn of the economy and the price also dropped all the way. In middle November, the price slid to only around RMB300/kg, less than half of the peak price in April. Many participants suffered great losses.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2007	152.2	113.7	248.2	173.2	177.4	129.9	93.8	119.3	170.1	138.4	110.9	135.6
2008	170.9	100.4	92.4	179.5	152.4	153.7	103.1	84.9	85	63	45.6	121.8

3.2.3, downstream stainless steel market

In 2008, the global output of stainless steel slid greatly due to the economic recession and reduced the demand of manganese metals. Many stainless steel mills cut output and lowered the price of stainless steel products. From the statistics announced, stainless steel output slid by 4.9% in Japan and 16.8% in South Korea, 16.1% in India, 10.5% in Taiwan. The trend of slowdown was not supposed to reverse in the near term after the financial crisis in America with huge impact on housing, automobile and stainless steel. The tendency was not expected to come to a halt before the second half of 2009 and the forward effect was supposed to last for years.

Part Ⅳ Market Expectations

In 2009, the world crisis would continue to slow down the economy operation in the developed countries and the outward economies. Though many countries are trying all methods to save the economy from sliding, the performance is not expected to go well in the near term. Manganese export would be still stagnant in the first half of the year especially when there is still huge supply of finished products. Most participants are watching and feeling hesitant to enter the market in haste.

As the participants already realized, the main support would come from the domestic demand for manganese metals. And many exporters already have fixed their attention to the domestic expand, wishing the plan of four trillion investment would promote the downstream market of housing and stainless steel. Around the Spring Festival, the

Chinese government also strengthened the aids to stainless steel and automobile industry. However, as it takes some time before the demand recovers, the market would be in oversupply due in February when the price would keep sliding for some while.